

BUSINESS METHODS
AND
THE WAR

BY THE SAME AUTHOR

Advanced Accounting.

Auditing.

Auctioneers' Accounts.

Bookkeeping for Accountant Students.

Bookkeeping for Company Secretaries

Depreciation, Reserves and Reserve Funds

Fraud in Accounts

Goodwill, and its Treatment in Accounts
(with Prof F TILLYARD, MA)

Hotel Accounts.

Solicitors' Accounts.

(Gee & Co , Limited)

A.B.C. of Bookkeeping

Business Organisation.

(Longmans, Green & Co)

Office Organisation and Management

(with H E. BLAIN)

(Sir Isaac Pitman & Sons, Limited)

BUSINESS METHODS AND THE WAR

BY

LAWRENCE R. DICKSEE, M.COM., F.C.A.

Professor of Accounting and Business Organisation
in the University of London

Cambridge :
at the University Press
1915

CAMBRIDGE UNIVERSITY PRESS
C F CLAY, MANAGER
London FETTER LANE, E C
Edinburgh. 100 PRINCES STREET



New York G P PUTNAM'S SONS
Bombay and Calcutta MACMILLAN AND CO., LTD.
Toronto J M DENT AND SONS, LTD
Tokyo THE MARUZEN-KABUSHIKI-KAISHA

21165

99 M1

(2)

②

All rights reserved

TO
J. L. AND R. L.

TO WHOM I AM INDEBTED
FOR SOME OF THE IDEAS
EMBODIED IN THIS WORK

6- SEP 1933

PREFACE

IN the early part of the present year I delivered four lectures on "Business Methods and the War" at the London School of Economics and Political Science. These lectures are now reproduced in book form. They must not be regarded as an attempt to deal exhaustively with the subject, but rather in the light of a few suggestions as to how business men might, with great advantage to themselves, take to heart such lessons as the war may have to teach them. After all, war is a business, and business—like life—is one long battle. Accordingly, there should be something for the business man to learn from a study of present conditions. That the British business man has still much to learn, I have endeavoured to suggest as gently as I can that he is not unteachable is my profound belief, as well as my confident hope.

LAWRENCE R DICKSEE

LONDON,

13th February 1915

CONTENTS

LECTURE I

	PAGE
Introductory—business organisation—a comparison of military and civilian methods of organisation—the organisation of labour—trade unions—administration	1

LECTURE II

Business training—technical education and military drill compared—the efficacy of drill—the application of drill as a means of acquiring dexterity—what has hitherto been accomplished in this direction—what might still be attempted—the difficulties in the way	21
--	----

LECTURE III

Elasticity an important requisite of organisation, both civil and military—the value of accounting as a means of benefiting by experience—what is “finance”—the organisation of management—the control of expenditure—the value of criticism	34
--	----

LECTURE IV

The nature of waste—the avoidance of waste—waste products and by-products—the “capture of the enemy’s trade”—how accomplished—how far likely to be permanent—“protection”—the laying down of new plant—emergency legislation—trading with the enemy—war prices and balance sheets—principles <i>v</i> methods—conclusion	52
--	----

LECTURE I

I have been asked by the Director to deliver a short course of lectures this term, dealing with the War from the point of view of my own special subject, Accountancy and Business Methods, and I have willingly agreed to do so, because I feel that we should all do what lies in our power, to strengthen the position of the country, by taking to heart all the lessons that the present War may have to teach us, although I need perhaps hardly point out to you that it is, as yet, too soon to attempt anything of really permanent value in this connection. On the other hand, I do not think it is necessary that we should wait until the War is over before attempting to consider the problem in some of its aspects. Accordingly, my aim in this present course of lectures will be, not to cover all the ground laid open to us, or to attempt to draw any final conclusions from the material that I am about to place before you, but rather to suggest to you certain lines upon which I think further enquiry may be found useful, as tending to promote business efficiency upon lines which up to the present have perhaps been insufficiently considered by business men.

It is—or rather, until quite recently, was—the fashion for business men to assume that soldiers know nothing about business, and accordingly that they had nothing to learn by a study of military methods of handling business. Even if it were true that soldiers, as a class, are unbusinesslike, it would not necessarily follow that there is nothing to be gained by studying their methods, but, as a matter of fact, I have long since formed the opinion that while the soldiers' business methods are in many respects different from those of the civilian, they are not on that account alone by any means necessarily inferior. The success that has attended the "Army

BUSINESS METHODS

Class" conducted in this School during the past seven years shows, no doubt, that military men can improve their efficiency by a study of civilian methods, and the wonderful success with which "Transport" and "Supply" have been managed during the present War shows this to be the case It occurs to me, however, that quite possibly civilians might, with equal advantage, make some study of the soldier's methods of handling business, and, accordingly, in this short course of lectures which I have undertaken, I propose to start by making some comparison of military and civilian methods of business organisation, with a view to seeing whether this new point of view may not suggest some ideas that are well worth following up in the interests of business efficiency

At the outset it is, perhaps, convenient that we should be quite clear as to what we understand by the term "Business Organisation" As a matter of fact the two words "business" and "organisation" mean very much the same thing The word "business" suggests the idea of well directed activity, and is, I believe, derived from the ceaseless hum always observable near a hive of bees The word "organisation" means some arrangement, or scheme, designed with the object of getting work done, the root-meaning of the word being "Work" The term is also one that has been utilised freely by biologists, and other scientists, to explain the various schemes of life that they have observed There are, we are told, elementary (or simple) organisms, to all appearances homogeneous—that is to say absolutely alike each part capable in turn of performing any functions that the whole may be capable of Such forms are apparently never very highly developed, but they serve at least as an interesting illustration of the possibilities and limitations of versatility In the higher organisms, on the other hand, in any body that is "organised" at all (in the naturalist's sense of the term) one finds a differentiation between the several parts, to each of which are allocated distinct and definite functions, and it is this idea that is seized upon when the term "organisation" is employed in connection with every-day business affairs Thus "organisation" may, for our present purposes, be

described as the science of dividing labour, and allocating different kinds of duties to different persons (or bodies) specially selected for their suitability to undertake those particular kinds of work

“Business Organisation” may thus be described as the science of developing the idea of the division of labour on the most efficient lines practicable, while the term “business” is now restricted, so that, instead of including *all* forms of human activity, it is now confined to the more common-place, or humdrum, forms—the arts and sciences (including the science of war) being excepted

In connection with business affairs, the need for organisation becomes increasingly apparent as the business increases in size, but in the beginning of things the need was not nearly so apparent. Thus in primitive civilisations, or under unusual conditions, one may find whole communities of men and women engaged on a similar form of handicraft, and devoting perhaps a very appreciable proportion of their life's work to the pursuit of this calling. Nor are these conditions confined to barbarous races in the northern latitudes, where the climatic conditions make outdoor work impossible during a considerable portion of each year, one finds peasant communities devoting themselves to such crafts as wood-carving, and the like, producing a considerable output per annum, which (under existing conditions) is practically useless to them because the essentially modern conditions of a commercial exchange is absent. The production is all of one kind everybody becomes possessed of a superfluity of this particular kind of product, and there is accordingly no local demand for it, while the climatic and geographical conditions render its transfer to a more suitable market a matter of considerable difficulty and cost. Here we have an example of what we may call “simple” organisation in connection with business affairs.

Until modern conditions obtained, these would be the normal conditions so far as the bulk of humanity was concerned. The class of work that one inhabitant of a village (or other community) was best fitted to perform would, more often than not, be the class of work that the great majority of the other

inhabitants were best fitted to perform, because they all came from the same stock and led very much the same lives Clearly, however, little advancement—in the modern commercial sense of the term—can be expected until the members of a community have sorted themselves out into groups, and divided among themselves the duties that the community as a whole requires to have performed, according to their respective gifts and skill Or, alternatively, communities scattered over a wider area may combine in some way, so that the commodities that represent the production of one district may be exchanged with the inhabitants of another district for the commodities which they produce, such exchanges naturally being effected by some traveller (or adventurer) acting as a medium of exchange between the separated communities

In mediaeval times, we find that there was a tendency towards more complex systems of organisation on both these lines Within the boundaries of a limited community, associations (or guilds) grew up, representing combinations of some particular class of worker, with the twofold object (1) of teaching a particular craft (or mystery) to a limited number of young persons who in course of time might succeed their predecessors, thus providing for the continuity of the output, (2) of securing privileges to the members of this inner ring (or guild) which, in extreme cases, might amount to a monopoly of production within a given area, and in less extreme cases to any kind of concession or protection short of an absolute monopoly

The other direction in which mediaeval organisations extended was towards encouraging a class of merchant adventurers, whose activities might bring about an exchange of commodities between the inhabitants of widely separated districts Apart altogether from the dangers which these pioneers ran, in consequence of the excessive frailty of the ships in which they voyaged, they must undoubtedly have had a very exciting time whenever they ventured off the beaten track and endeavoured to find new markets for their trade. But, however that may be, it probably did not require a very high order of intelligence on the part of governing

chiefs, or princes, to recognise that these merchants conducting an international trade could do them little harm, and might do them much good Accordingly, even in these times when human life was far more lightly regarded than it is to-day, over the greater part of the world merchants seem to have been able to voyage from coast to coast and exchange commodities with comparative security, and they appear at a very early date to have recognised the importance of observing good faith among themselves, as being the only practicable means by which their operations could be conducted at all This belief, that the other party to a business transaction will carry out his part of the bargain in good faith, is the foundation on the basis of which the whole of the elaborate superstructure of modern Credit has been reared

The whole force of civilisation has been practically continuously in favour of the development of foreign trade, and the encouragement of merchant adventurers, but as much can hardly be said of the root-idea that underlay the mediaeval guilds No doubt experience tended to show that special privileges, in the nature of a monopoly, granted to a limited number of persons are apt to produce a race weak on those special points where the welfare of the organism as a whole required that they should be strong To take a very simple instance If there be an effective demand in a community for (let us say) half-a-dozen armourers, and all are members of the armourers' guild, inasmuch as all those members are, by the nature of their circumstances, assured of full employment, they have no very powerful inducement to become specially skilled or industrious workmen Under normal conditions, of course, they could not hope to retain the work if they were unfitted to perform it, for as soon as their unfitness became apparent the work would naturally be given to armourers in a neighbouring district, even although this might involve additional expenditure in cost of transit But, if a prohibitive duty were imposed upon all imports of arms, the competition arising from free trade would become impossible, with the result that the community would have to rest content with such inferior arms as their own licensed (or privileged) armourers

were able and willing to produce It is not altogether surprising that such a system, in course of time, should have been judged effete It may be said to have died from the inherent qualities of human nature—or, for that matter, of all nature—which tend to save energy by allowing to become effete that which is not constantly in demand At the same time these guilds are well worthy of our consideration in passing, in that they represent perhaps the first serious attempt that was made towards Technical Education—the education of certain individuals to fit them to undertake the performance of certain specialised duties

Passing on to modern, and more complex, forms of business organisation, these (as I have already said) are in essence all schemes for the division of labour, based on the bedrock fact that human beings are not all alike in aptitude and power, and they are intended accordingly to allocate different kinds of duties to different individuals, selected for their suitability to perform that particular class of duties The development of such a scheme depends, of course, for its success on the possibility of dividing the work as a whole into processes, or parts, capable of being performed by different individuals The end sought to be obtained in all cases is an increase in speed, or efficiency, or both, the work may be purely constructive work, or it may be work connected with exchange, administration, or finance, all of which are essential to produce the best possible return in the form of commodities produced in exchange for a given quantity of energy expended

A complex organisation on these lines may, roughly, be said to require a division of those who take part in it into four distinct classes

(a) The "Long-Heads," who initiate and decide broad questions of policy,

(b) The "Head Pieces," who carry out the policies designed by the first-named, and for that purpose issue orders to their subordinates,

(c) The "Supervisors," who receive orders from the last-named class, pass them on to the next class, and see that they are strictly carried out, and

(d) The "Rank-and-File," those whose duties merely consist in obeying orders received from their superiors.

These four classes, you will observe, roughly correspond with four classes existing in any normal military organisation

- (a) The field officers,
- (b) The company officers,
- (c) The non-commissioned officers, and
- (d) The men

The parallel is, of course, only approximate, and not absolute, but it is sufficiently accurate to be worth mentioning as we go along

Any departure from the simple organisation of a community of craftsmen, in the direction of modern conditions involving the division of labour, naturally involves that a certain limited number of individuals must be promoted into an advanced position, and that *pro tanto* the remainder be relegated to a subordinate position. It is, accordingly, I think, very evident that no progress in the direction of complex organisation is to be expected on the initiative of the majority. In the language of the demagogue, the whole question of modern organisation is in the direction of "exploiting the many for the benefit of the few," in the sense that the responsibilities of the many are reduced and the responsibilities of the few are increased. The daily work of the many is made more monotonous, because more mechanical, the daily work of the few is made more interesting, because more responsible and more varied. This does not, of course, at all necessarily mean that the "exploited" many are worse off, because this process of evolution has taken them in hand. The process—if it be a real advancement—is clearly a process which benefits the community as a whole. There is no reason why it should not benefit the humblest members of the community, as well as the most privileged and the most able, but, naturally, it is a process that is more likely to benefit individuals belonging to the minority class of "officers" than individuals belonging to the majority class—the "men"—if only because a comparatively small improvement divided among the few will benefit them as individuals far more than a corresponding sum similarly

divided among the many. But, apart altogether from any question connected with the distribution of the increased wealth derived from improved organisation, it will, I think, readily be understood that the idea *could not have been conceived* by anyone whose abilities naturally relegated him to the lowest class of workers.

Accordingly, the earliest examples that we find of the complex organisation arising out of the scientific division of labour, are examples of what (without using the term in any offensive sense) I may describe as Forced Labour. The "field officers" and "company officers" were usually members of a ruling race, the men—and possibly the supervisors, or "non-commissioned officers"—members of a subject race. In course of time, according to circumstances, the distinction between the two classes might tend to become obscure, or it might be rigidly preserved, although, perhaps under different names. Further, in course of time, there might be promotion from the lower division into the upper division, and, conversely, expulsion from the upper division into the lower division. What was originally a "subject" (or conquered) race might in course of time, when nationalities became more mixed, become known merely as a lower class (or caste), or, in extreme cases, as a slave community. In all such cases, even where slavery was the order of the day, there might be promotion for the favoured few into the higher class. There may be very little real slave labour in existence throughout the world in the present day, but, whatever our particular form of political creed may be, I think, that history will lead us to recognise that, in practically every country, there exists some relic of the old distinction between the conquering race and the subject race or races. But, however doubtful this connection may have become in some countries in course of time, there can be little doubt that instances of expulsion from the ruling class into the lower class are still clearly observable. Even to this day a convict in this country is sentenced to "penal servitude," or to "hard labour." Under modern conditions that may mean that he does no work of any particular economic value to the community; but within times which at all events our fathers can

easily remember that was by no means the case—convict “labour” was then a very real thing, and a definite factor in the labour market. In the United States, to this day, convicts are let out as hands to farmers at so much per head, and in many other countries they are (or have been) similarly employed on low-class labour.

In drawing your attention to these points, I need hardly say that I do so without any desire to import anything approaching party politics into my lecture. My object is merely to draw attention to the bare facts. That whereas, when labour was performed by craftsmen, all occupied an approximately level status, their material circumstances being dependent entirely on their respective abilities and industries, a complex organisation exploiting the principles of the division of labour, while it no doubt recognises the fundamental law of nature—that all are not equal, and that it is better to recognise the fact than to fight against it—necessarily involves certain persons being put into a position superior to that occupied by others, who in the nature of things would be the majority. Further, in all normal circumstances, while such an organisation would tend to increase the wealth of the community as a whole, by increasing productive efficiency, the advantages are likely to be reaped by the few, rather than by the many, or at all events, by the few in a greater proportion than by the many. I mention all this because, bearing in mind that all problems connected with the organisation of labour are connected with the organisation (or exploitation) of human beings, one has to recognise that, in such circumstances, so long as the majority (rightly or wrongly) form the view that they are not receiving their “fair share” of the increased wealth resulting from this improved method of organisation, they will not be enthusiastic advocates of such organisation *per se*, or (to put it another way) they will not, with undivided loyalty, try to the best of their ability to make that system “work.” It may be—and no doubt is—a sufficiently difficult thing to organise the labour of a community on such lines that there is work available for every member of that community of the precise nature that he is best able

to perform; but the attempt thus to apportion duties on the academic basis of the powers of the individual runs a serious risk of producing economic failure—if not absolute chaos—unless every individual member of the community is loyally prepared to “play the game,” and perform his allotted part as best he can. When we get our “Utopia on Earth” we may find it possible to arrange an apportionment of duties on lines that will work out well and smoothly in practice, until then, unless we are courting failure, we must assume that—whether it be through disinclination, disloyalty, or mere inefficiency—the lower grades of labour in particular, and all grades of labour in general, will only work efficiently so long as they are efficiently supervised. The labour that must necessarily be devoted to supervision is thus not merely essential, but of the utmost importance. Theoretically it may be regarded as a clear loss, such as that arising from friction, a loss that ought not to exist, but practically while we remain in this material universe, it is inevitable. It is for this reason that we require a middle-class between class (a) the designer of policies, and class (d) the actual worker. Classes (b) and (c) are the supervising classes, without whose collaboration it would be hopeless to expect that the policy of (a) would be carried out by (d) as originally intended.

Up to the present, we have assumed that all the development of organisation that has taken place has taken place at the initiative of those whom (for purposes of distinction) I have described as the ruling class, but any serious enquiry into business organisation requires that we should not fail to recognise the fact that in the meanwhile “Labour” has been organising itself on its own lines, in what it conceives to be its own particular interests. In most fields of industry we have now some form or another of Trade Union, and these Unions have been formed for the purpose of securing for their members increase of pay, reduction of working hours, better conditions of labour, or any two of these, or all combined. In so far as they have obtained these objects (or any of them) up to date, they have done so by combination among the workers themselves, and for the purposes of such combination

they have been willing to assume that one man's work was as good as another's—or, at all events, ought to be paid for at the same rate This is a proposition so contrary to the facts that must be apparent to even the most superficial observer that it is surprising that the better-class worker (i.e. the specially skilled, or the specially rapid, worker) should have been willing to assent to it, but, however that may be, it is a fact which observers must take into account While, in some trades, remuneration based on piece-work—on the rapidity with which the work is done—is permitted, in others it is discouraged, or forbidden, and the quantity of work to be performed per hour on any given process is rigidly laid down It is, I think, important for us to recognise the existence of this particular form of business organisation, because of its effect on the most efficient—and therefore the most desirable—workmen While, of course, a uniform rate of pay to all workers—good, bad or indifferent—doubtless secures greater continuity of employment for the best and most reliable workers (the least desirable only being employed at all in times of exceptional pressure, when no better labour is available), while the system does undoubtedly give this advantage, or preference to the better-class worker, it for all practical purposes places definite limitations on the maximum income that he can possibly make Accordingly, it tends to drive exceptionally good workmen out of the country where such conditions obtain, into other countries where they are free to exploit their own labour unfettered by any such conditions There can be no question that this particular form of organisation has been in the past, and is to-day, responsible for a considerable amount of emigration from this country on the part of the better-class workers

Another point worth our careful consideration, in connection with the organisation of workers among themselves, is that while in many cases the unions have been successful in insisting that employment in certain business houses should be given only to members of unions—thus securing for themselves a monopoly of those positions—they have on the whole done very much less than the old mediaeval guilds did towards

securing that their members should be efficient workmen. While, originally, they did undoubtedly insist on apprenticeship as a condition to membership, and in that way aimed at restricting employment to qualified workers, now-a-days the payment of subscriptions appears normally to be the only test insisted upon. Accordingly, the unions are giving little or nothing to the community as a whole in exchange for such monopoly, or *quasi-monopoly*, as they may have succeeded in enforcing upon employers. On the other hand, it is important to bear in mind that the position of the really first-class workman is not quite so circumscribed as might at first glance appear, in that members of unions are generally allowed to act as working foremen, in which event they can secure higher rates of pay than those granted to the ordinary worker, and the number of posts so available is sufficiently large (combined with the emigration to which I have already referred) to make it possible for employers, as a rule, to remunerate adequately any man of more than average ability whom they may wish to keep in their employ. It is doubtless owing to these circumstances that the system has not already broken down in consequence of its own inherent unfairness.

Men so employed as working foremen, timekeepers, store-keepers, superintendents, and the like, may for some purposes be regarded as occupying a position analogous to that of the non-commissioned officer in military organisation—as a factor ensuring that the rank-and-file do their work conscientiously and efficiently. But, so far as my observations go, they are much less to be relied upon than the non-commissioned officer, and I think the reason for that is to be found in differences of detail in the matter of organisation. In the Army, non-commissioned officers mess separately from the men, and (to say the least of it) they are not encouraged to mix with the men on terms of social equality. Accordingly, it is made easier for them to discharge their duties than it would be if non-commissioned officers and men had all to mess together. In civil life no such social distinction exists, and accordingly there is not much medium observable between the two extremes of (1) the member of Class (c) who is lax in the performance of

his duties—whose aim is chiefly to make things pleasant all round—and (2) the unbendable man, who, while he may perhaps perform his duties conscientiously, in the process of doing so generates an altogether undesirable and wasteful quantity of friction, which is not infrequently the determining cause of industrial disputes Another point where civil organisation appears to be at a disadvantage, as compared with military organisation, is that it is, as a rule, absurdly under-officered This, however, is a point that I shall have to come back to again later on, so we need not stop to consider it at the present moment

“Labour,” in the sense in which we are now considering it, may for some purposes be regarded as divisible into three departments

- (1) Constructional labour,
- (2) Clerical, or accounting, labour,
- (3) Labour concerned with finance

It will be seen that upon this basis I do not regard “administration” as a separate department Administration is rather the work of the officers and non-commissioned officers, who get things done, who see that the rank-and-file do their work and that their duties are so apportioned that the whole machine works smoothly and efficiently

In connection with constructional labour, so far as the men belonging to Class (d) are concerned—the rank-and-file—the problem is to arrange the work that has to be done, and to divide it up into stages, or processes, in such a way that the work allotted to individual members of this class may be as uniform and straightforward as possible, and make the least possible demand upon their initiative or intellect, however great the demand may be upon their energy, steadiness and technical skill The main problem (having arranged the division of work on these lines) is, as far as possible, to secure at all times a supply of the necessary labour, notwithstanding the fact that the demand will in all probability be fluctuating continually In some cases it may be found impossible to get labour of the required quality unless steady employment can be offered representing at all events a minimum rate of pay

per week, or even per month, but in other cases men are taken on and dismissed from hour to hour, as the requirements of the work on hand dictate. The more highly it is practicable to organise and departmentalise the work—and, accordingly, the more mechanical does the work of the individual become—the easier (as a rule) is it to obtain all needful supplies of labour at short notice, and for short periods. Accordingly, while a high degree of organisation in this respect would seem clearly to be in the interests of economy in production costs, it seems to be quite an open question whether it is in the interests of the men themselves, as tending to provide them with continuous employment at remunerative rates.

But, however highly the work may be organised, and however mechanical the work of individuals may be made, the fact remains—and must for all time remain—that the actual efficiency of the workers themselves will not be uniform. Some will be capable of performing more difficult tasks than those allotted to them, some will be able to do the work required of them satisfactorily, but no more, others, while able to do it in a sort of way, will never be entirely satisfactory. Moreover, some workers steadily improve in efficiency, others as steadily deteriorate, others again will be erratic in their performances. Considerations of efficiency require that continuous note should be taken of these differences between the individual workers, not merely with a view to giving the preference of employment at all times to those whose work is the most satisfactory, but also because it is largely from among these—at all events under normal conditions—that Class (c) of working foremen, etc (whom we are calling non-commissioned officers) are recruited.

In this country, in most forms of activity it is impossible for an undertaking working on a large scale to recruit its labour exclusively from the ranks of non-unionists, and, as of course you know, one of the most frequent causes of industrial trouble is the reluctance of unionists to work side by side with non-unionists. While there can, I think, be little doubt that the organisation of labour by trade unions (which does little, or nothing, to guarantee that every member of a union is a

steady and competent workman) is *per se* of little use to employers, and while one can quite understand the attitude of the masters who prefer to employ "free" (or non-union) labour as much as possible, if only in order to be able to "play it off" against the demands of the union, I think it must be admitted that the objection of unionists to work side by side with non-unionists is perfectly intelligible. Whatever the unions have or have not succeeded in accomplishing, it is incontestable that they have on the whole succeeded in increasing the worker's pay, in reducing his hours, and in generally bettering the conditions under which he works, and these benefits, such as they are, have to a large extent been absorbed by the non-unionists although they have contributed nothing to the funds of the unions that brought them about. It is not surprising, therefore, that there should be a certain amount of antipathy between unionists and non-unionists, or that this antipathy should sometimes give rise to disputes which, for the time being, effectively put out of gear the whole industrial machine. Accordingly some employers prefer only to employ union men, even when no pressure to that effect is brought to bear upon them by the union itself, on the other hand, I think it is incontestable that the employer who can always get what labour he wants from the ranks of non-unionists, is likely to find that his organisation works more smoothly by proceeding on those lines.

Passing on to Class (c)—the non-commissioned officers of constructional labour—these, as I have already said, are ordinarily recruited by promotion from the ranks. The arrangement is an excellent one in many ways. It means that those of the supervisors in most intimate contact with the workers are drawn from their own class, and are therefore (presumably) in sympathy with them, and able to understand their aspirations and their grievances. The arrangement is also very convenient, as providing a means of recognising and rewarding exceptional services, by which means alone can it be hoped to attract men of more than average ability when uniform rates of pay are the rule. But, it is, I think, quite an open question whether, in many trades, the rank-

and-file of workers provide a sufficiency of men qualified for such promotion. There can be little doubt that, in many cases, trouble has been caused by the overbearing manner adopted by these foremen and supervisors towards those under them—a position of affairs which, of course, could never have arisen, had only really suitable men been promoted. The suggestion was put forward a little time since by a large employer of labour, as to whether business houses were not proceeding on the wrong lines in recruiting all their non-commissioned officers from below as to whether it was not desirable that more of the lower work of supervision should be done by young men of the officer class—by a new class that we might call “cadets”. There can, I think, be little doubt that in times of peace there exists a supply of such men that would be quite adequate to meet any demands likely to be made upon it for some little time to come. Young men of good education, not attracted by (or for that matter at all suited for) office work or intellectual pursuits, but with an inherent faculty for handling men, who (if properly trained) would make excellent supervisors in a comparatively subordinate capacity. Nor do I think it at all necessary that the cost of supervision should be increased by recruiting from this class, particularly if it be borne in mind that those who prove themselves to be of real ability could much more easily be promoted to the “officer” class than could men originally drawn from Class (d), whose educational opportunities have as a rule been of a very limited description.

As regards Class (b)—the “officer” class—one usually finds in connection with ordinary business concerns that these are far too few in number, that, in consequence, their time and energies are so devoted to routine work that they have little or no opportunity of developing into the “Long-Heads” that I have described as Class (a)—those who really make the difference between the results achieved by a business house thoroughly well-managed and one controlled by merely second-rate men. Because this “officer” branch of the service is under-staffed, those engaged there are but too often broken on the wheel of mere routine. They have no opportunities of

getting into real touch with their men, such as are open to the military company officers, they have little or no time for (or opportunity of) getting into touch with outside events and tendencies, which, even if they do not influence the present, may very easily materially influence the future trend of business operations so far as that particular house is concerned. The average business man is undoubtedly over-prone to consider that *all* administrators' or officers' work is non-productive, whereas, of course, the proper view of the problem of Business Organisation is to regard the machine as a whole, which involves the recognition of the fact that, unless properly guided, no organisation—no matter how well conceived in itself—could run for a single day. *It is just as much "productive" work to look after the animate as it is to look after the inanimate machine.*

Another branch of officer's work connected with constructional labour, to which all too little attention is as a rule devoted in this country, is that of experts in allied trades, or callings. It is a little difficult to find any equivalent for these in military organisation, but perhaps the nearest is the military *attaché*. At a time like the present, when new processes are continually superseding old ones, and altogether novel methods of achieving results are being discovered, it is important to bear in mind that, however skilled one may be in one's own particular business, one cannot very well be expected to appreciate at the earliest possible moment exactly how one's own business might utilise the latest discoveries in the fields of abstract science. In Germany, it is a common thing for large business houses to employ chemists, electricians, and other scientists engaged exclusively on research work, the benefits of which are to be applied to the devising of improved methods of handling one's business. Over here such appointments are by no means unknown, but they are still the exception rather than the rule. There can be little doubt that, as time goes on, the importance of a wider outlook in this direction will become more and more general.

Time presses, and I must accordingly pass on to the consideration of the organisation of clerical (or accountant) labour.

Here the object is to ensure a full and honest record of what has taken place, in such a form that all necessary information may readily be available to each and every person able to benefit by the knowledge Formerly it used to be thought that accounting was a mere matter of keeping tally of what one owed and what was owing to one, and the preparing from time to time of a financial statement showing how one stood and what profits one had made Now it is slowly being recognised that it is important not merely to know what profit one has made, but also "why" and "how" one has made it, important not merely to know the broad result in general terms, but also to have the accounting system thoroughly organised so as to show results in detail, so that the work of each department, of each process, (and so far as may be necessary) of each worker, may be judged by results This new view can hardly be regarded as the birth so much as the renaissance of adequate accounting methods The record kept by the merchant adventurers of the middle ages (who left us the so-called "Italian" system of bookkeeping by double-entry) were certainly of no superficial kind on the contrary, it erred on the side of over-elaboration, and probably for that very reason fell into disuse Then followed a "dark period," from which we have not yet altogether recovered, or it would not have been necessary for Parliament (so recently as 1913) to pass an Act making it an offence for a man who had failed on a previous occasion to be adjudicated bankrupt, if, during the previous two years, he had neglected to keep such accounts as reasonably showed the position of his business affairs

In the early days the constructional work in connection with business (whether it involved commerce or manufacture) was performed largely by persons of little or no education, accordingly educated men—"clerks" or "scribes"—were employed to go among these workers, to hear their accounts of what they had done, and to record them for future reference. Such were the original "auditors" Now, however, the Accounts Department is normally starved as to numbers, and not infrequently recruited from the dregs who are found unemployable for constructional purposes. In these days, when

everybody is educated up to a point, anyone is thought to be sufficiently well educated for employment in the Accounts Department. The pay is normally appreciably less than that obtainable in other departments after the same number of years' service, and the prospects of promotion are certainly not more attractive. That at least is the position of affairs with most manufacturing concerns, and it contrasts forcibly with the conditions that one finds among merchants, who have always regarded accounting as by no means the least important part of their organisation. The office of the average manufacturing concern of the present day may fairly be said to contain no "officers" at all. Often the head of the Accounts Department would rank, as compared with the other departments, somewhere on a level with a colour-sergeant, or possibly a sergeant-major, the nearest approach to an "officer" being the professional auditor—who, of course, is not one of the regular staff at all. In consequence, even supposing the accounting staff possess the necessary ability to devise systems of record really suited to give the information required in the interests of efficiency, they lack the authority and personality necessary to impose their views on the Constructional Departments. In some few cases, adequate schemes are evolved by collaboration between the officers of the Constructional Departments and the chief of the Accounts Department, but these cases are few and far between. In general, a knowledge of accounts is not considered any part of the necessary education of a business officer, who accordingly is often quite ignorant of the uses that accounts might have for him. On the contrary, he is usually obsessed with the fixed idea that accounts are a necessary evil, that the money spent upon them is sheer waste, and in particular that departmental accounts were invented for the sole purpose of embarrassing heads of departments, and getting them into trouble with their chiefs. I believe that somewhat similar views of accounts are not altogether unknown among military officers (and there, perhaps, with far more reason), but it is incontestible that adequate accounting is less necessary to the Company Officer for the due discharge of his duties than it is to the business officer for the discharge of his.

What is really required, in my opinion, to improve this part of the organisation of business houses generally, is that the Accounts Department should occupy a position in relation to the business as a whole, similar to that which the Royal Engineers, or the Army Service Corps, occupy in the Army. That is to say, units attached to this department should be stationed at every point of the business where their services can be utilised to advantage, they should be given such a standing, in comparison with the constructional staff, as to make it practicable for them to do their work efficiently, they should be properly officered, and properly paid, and, above all, the constructional staff should be brought up to regard them as friends and allies, rather than as natural enemies.

LECTURE II

The next matter that I want to discuss with you in the course of our present enquiry is the difference between military and civilian methods of training, with a view to considering whether there is anything in the military system of training that might with advantage be imported into civil life, as tending to increase efficiency or make for smoothness of working.

As I pointed out to you last week, there is nothing in the military machine corresponding to trade union bodies, which aim at "organising" workers (or certain sections of workers) without taking any effective steps—and as a rule, under present conditions, without taking any steps whatsoever—to ensure that their members shall be really efficient workers, as judged by any reasonable standard.

In normal times the army recruit is at least as "raw" as the industrial recruit, but whereas the latter is left to become efficient as best he can, by making use of his own powers of observation and of his "opportunities" of acquiring practical experience (which, now that apprenticeship is practically dead, are not as a rule very great) the army recruit is systematically taken in hand from the first, and taught by trained instructors upon a definite system, with the result that while practically every military recruit becomes in due course an efficient soldier, the proportion of civilian workers in any walk of life that reach a corresponding standard of efficiency is certainly very much lower. This is doubtless due to the fact that, whereas the military system encourages application, and, as a matter of settled policy, rewards it by promotion and increased rates of pay, the trade union system, as often as not, deliberately discourages the worker who endeavours to improve himself, and as a rule discourages him somewhat effectively—by the

simple process of making it impossible for him to earn a higher wage as the result of increased efficiency. I do not, however, want to labour this aspect of the matter unduly, partly because there is so little in common between trade union organisation and military organisation that we should be wandering too far from our point were we to continue the comparison at length, and also because it would be impossible to go very far in this direction without raising questions of politics, which are certainly outside the scope of our present enquiry

The idea of Technical Education, as something that might be useful to a community, is one for which, I believe, we have to thank the Germans. It is an idea now about a quarter of a century old, so far as this country is concerned. I do not wish to say anything against it as an idea, but, as a contribution towards national efficiency, it has, I think, suffered very largely from the fact that it is—and always has been—too academic in its character—too much separated from the practical work that the student is doing from day to day. Such a state of affairs is, no doubt, practically inevitable, so long as Technical Education is regarded merely as a branch of pedagogy, as something to be dealt out by educationalists through an Education Department. So long as such a state of affairs exists, it is, it seems to me, not for employers of labour to complain if the instruction given is not of the precise description that they would find most useful for their own particular purpose. In just the same way that our national system of Elementary Education seems to have caused parents to regard the education of their children as the business of the State, rather than of themselves, so employers seem to have drifted into thinking that it is the business of the State to provide them with an endless stream, not of raw recruits, but of perfectly trained, efficient workers. On the other hand, Army Officers (whom these same employers of labour regard as essentially unbusinesslike) have always recognised that, if they want efficient soldiers they must train them for themselves, and the high level of general efficiency that has been attained in this direction—often (as in Egypt) with most unpromising material—shows, I think, pretty clearly that, so

long as the training is of the right description, the raw material is not a matter of very vital importance—unless, of course, the conditions are such that it is impossible to afford the time necessary to enable a complete and thorough course of training to take effect. The main idea that I wish to suggest to you in my lecture this evening is as to whether, in most walks of civilian life, something at all events approaching to the military system of training might not be introduced with advantage, or, in other words, whether the efficiency of both manual workers and head workers might not be increased very materially by means of “Drill”

As a matter of fact for all practical purposes Drill is invariably employed in all cases where great speed, or great certainty of result is important, and it is, I imagine, because of the superiority of the results obtained by Drill that it forms part of both military and naval training. Let me take a few examples, selected from different walks in life

You have, no doubt, all of you at one time or another seen something of the performances of the “quick-change” artist, who in a matter of seconds can rearrange his general appearance so as to imitate in turn a number of different persons. If you were to enquire as to the methods by which these quick-changes are achieved, I think you would find that in all cases they are the result of Drill. The artist has in the first instance to study carefully how the features to be reproduced may be counterfeited with a minimum number of movements. Then he has to study the exact order in which these movements are best arranged, and the precise position that should be occupied by his accessories so that each may be reached with a minimum amount of motion and delay. Having thus settled what we may call the “skeleton” of his scheme, he proceeds to practise the performance of the designed series of motions, until the utmost possible celerity has been obtained. These predetermined motions, will, save in the case of accidents, always follow each other in the order in which they have been practised, and the more skilful the performer is, the more remote is the risk of some accident that requires an unpractised movement on his part for its correction.

Take another case There are few occasions when extreme speed of movement is so important to the result as in the case of the musical performer, say the pianist or the violinist In one sense the necessary speed of movement may be the result of continual practice of a general description since a very early age, but it has to be remembered that, in the matter of rapid movements designed to produce a particular result, the brain and nerves are required to act as well as the limbs In the nature of things it would be impossible for the performer to play a difficult passage at sight as rapidly as he could play it after practice It is not merely that the brain cannot take in new combinations as rapidly as the fingers of the skilled performer can be made to execute them, but also because some study has to be made of the best means to arrange the work to be done among the fingers available for the purpose In a really difficult passage, the order in which the fingers are to succeed each other is a matter calling for careful consideration with a view to determining which of the various possible alternative fingerings is the best, and, this point having once been settled, if great speed is to be achieved, the passage will always be practised with the same fingering, with the object of reducing what was originally a matter involving some delicacy of judgment to a mere matter of memory and muscular routine —or, in other words, a matter of reflex action

Take yet a third case We have all on many and various occasions seen civilians harness and unharness a horse We have probably all at one time seen the same performance gone through by firemen, or by a detachment of the Army Service Corps at the Military Tournament In each of the latter cases the operation occupied less than one-twentieth of the time than it did in the first case It is true that more men were at work upon the job, but it is a very doubtful question whether four agricultural labourers could harness a horse and put it into a van much more quickly than one It is at least conceivable that the operation might take longer, through their getting in each other's way However that may be, the difference in time occupied is certainly not altogether explained by the difference in the number of men employed. It is

explained by the question of Drill. Drill on a well thought-out scheme, designed with a view to reducing to a minimum the number of movements required, the division of these movements among those available for their performance, and the continual practising of these movements at a gradually increasing speed until they can be performed at the desired rate with certainty and absolutely without a hitch.

Another very important factor in connection with the application of Drill to any desired series of movements is that, apart altogether from the question of increased speed, greater certainty of the result, and the ease with which large bodies of men may be simultaneously employed without a hitch, Drill may be employed to reduce the common movements of the body to matters of mere routine, with the result that the head is left free to observe what is going on to an extent that would otherwise be absolutely impossible. Accordingly, in the unlikely event of something going wrong, there is a much better chance of correcting it before it has assumed serious dimensions. Further there is a complete absence of brain fag, with the result that the worker is able not merely to get through more movements per minute, or per hour, but also (if necessary) to work a long time continuously without undue fatigue.

To turn to another matter, more under our immediate notice at the present time, I do not think that any of you can have failed to notice the marked improvement in the marching powers of our recruits as a result of Drill. It is not merely that they are able to cover distances that the majority would have thought impossible, or all but impossible, a few months ago, nor is it merely that, in addition to their own weight, they are now able to carry equipment which, all told, comes to something like an additional fifty-six pounds. The more noticeable improvement is not so much under either of these headings, important as they are, but, rather, in that they are able to get through their work without distress, and even to thrive upon it, so as to be capable of carrying out yet more arduous tests as their training proceeds.

Of course, directly one talks of "marching," one at once conjures up the idea of military Drill, but when you come to

think of it, marching is neither more or less than a method of covering ground, with a necessary load, at a maximum practicable rate, with a minimum amount of fatigue. It is, accordingly, merely the military name for that which we have all been doing since babyhood, viz walking about, and there are quite a number of persons engaged in civilian occupations—e.g. postmen, telegraph boys, messengers and the like—who are called upon to cover a far greater mileage than most soldiers are ever expected to achieve in times of peace. For the purpose of the comparison that I now want you to note, it is necessary for you to carry your minds back to the state of affairs that existed before the commencement of the war, for human nature is essentially imitative, especially where its enthusiasms are aroused, and the daily spectacle of troops marching through our streets has undoubtedly affected the way in which almost everybody walks in these days. But, if you can carry your memories back five months or more, I think you will agree with me that one of the most conspicuous things about those whose daily occupation it is to walk, and to do practically nothing else (such as telegraph boys, district messengers, postmen, and the like), was that somehow it seemed as though no one had ever taught them how to walk, and that none of them—or hardly any of them—had the faintest idea how to cover the ground with a minimum expenditure of physical energy. In most cases the pace was too slow to acquire that momentum which is so valuable as a means of covering long distances, in most cases they seemed to have acquired a habit of lurching from side to side which effectively destroyed any slight forward momentum that there might be, in many cases they carried their weight so far back that every step was a distinct physical effort, instead of being—as it should be when walking on the level—a practically effortless movement to avoid falling forwards, while (perhaps most important of all) instead of using all the available muscles that Nature obviously intended should be used, the vast majority had got into the habit of using a very limited number of muscles (and these not to their full extent) and not necessarily using the same muscles on both sides. Such faults may be excusable with those who

are temporarily or permanently lame, but, on the part of those who are physically sound, they can only be described as an accumulation of bad habits—as a result of going about their work without in the least thinking how it might best be performed with a minimum amount of effort to themselves One of the first things that every drill-sergeant has to do is to teach his recruits how to walk Hardly anyone who has not been drilled knows how to walk I put this forward as one of several examples, but perhaps the one that you can best test for yourselves Proper Drill in the matter of walking may easily improve walking efficiency, while at the same time it greatly increases one's powers of endurance Of course, if one's conception of life is artificially to restrict one's output, the scope for improvement in this direction may not be very great, but, even so, there is much virtue in Drill, as a means of encouraging the lazy to "speed up" so as to keep time with the rest, while I have never heard it suggested that marching drill interfered with the capacity of those who, on subsequent occasions, might wish to improve upon the regulation pace

In these days, when practically all forms of labour are "organised," and when (as I pointed out to you last week) organisation consists almost entirely of the division of labour on scientific lines, so that each, no matter how limited his capacities may be, is capable of becoming an expert in his own particular lines, it necessarily follows that the actual physical movements performed in the course of a day by most men belonging to the artisan and labouring classes are very largely made up of mere repetitions of a given series of movements, which, in the majority of cases at least, are less complicated than (shall we say) the movements of the Tango In some of the simpler cases they may even be no more complicated than the movements of the Waltz If this be recognised as a fact, I think it will be agreed that it readily follows that these necessary movements, and all necessary variations of them that may be required from time to time, are capable of being made the subject of Drill, and that, were they so treated, the same advantages would be observable as in the case of marching drill. That Drill can thus be applied to quite complicated,

and quite lengthy, series of motions on the part of one individual (or on the part of a section, or group, of individuals working together) we all know as a result of observing a troop of acrobats performing. As a rule the performance involves a certain amount of danger, and for this reason a certain amount of mental strain on the part of the performers, who, because of this element of danger, must always be upon the alert for possible accidents, but when the element of danger is absent, or where as a result of long and successful practice it has been forced into the background, the whole performance of the acrobat becomes a series of reflex actions, leaving his mind free to follow its own devices—or to do nothing whatever, according to his personal inclination. In either event the acrobat's sense of fatigue, after he has gone through his performance is very small, as compared with the amount of physical energy that he has put into it, far less than that experienced by the average artisan, or labourer, who has consumed an equal amount of physical energy.

This brings me to another suggestion, namely, as to how far the effect of Drill, as a means of producing results with comparatively little physical fatigue, is due to taking advantage of the practically universal sense of Rhythm. I say "practically universal" because, while doubtless many who work with their hands have never heard of "rhythm" and have no idea what the word means, yet as a matter of fact everybody has some appreciation of "keeping time." Everybody knows, for instance, that if oarsmen really "pull together," it is a simple matter for them to outpull their rivals in another boat who do not pull together, even although the latter may be physically the stronger crew. Everybody knows, moreover, that while this help of rhythmical motion is especially valuable with a team (or group) of men working together to achieve a united result, as a boat's crew, regularity of motion—which is the essence of rhythm—is equally useful to the individual working alone, as in the case of a single sculler. It is only when it is rhythmical that effort can in any sense partake of the nature of reflex action, or take advantage of the laws of momentum. I suggest to you that there is hardly any kind of manual work

that cannot be done more rapidly, more easily, and more pleasurabley, when conforming to rhythmical laws than if done in an irregular and haphazard way, with no assistance whatever from the natural laws of action and reaction, muscular contraction and expansion. And I suggest, further, that this must be especially the case with regard to work performed in connection with machinery, which necessarily under all circumstances works rhythmically and usually upon a very simple rhythm. We all know how a band improves the marching capacity of a regiment. We all, I think, also know how, in the same way, music makes easy the concerted efforts of a troop of acrobats, or of a show squad of Artillerymen, or Army Service Corps men at the Military Tournament. But my suggestion to you under this heading is that it is not so much the music that assists as the rhythm that the music enforces, and that, when once the idea of rhythmical movement has been acquired as a result of Drill, the music becomes unnecessary¹. That it is not indispensable is evidenced by the fact that the acrobat's most dangerous performances are, as a rule, carried out in silence, but they are always carried out in strict time.

It may be that, even for ordinary industrial purposes it would be found in many cases a wise distribution of labour to employ music to an extent that has, so far, perhaps, never even been thought of, but is quite unnecessary for my present purpose to suggest anything so extreme or revolutionary. My point is that the daily work of the vast majority of daily workers consists of the mere repetition of a quite limited number of muscular movements, and that these movements can be performed more quickly, and with less fatigue, if performed rhythmically at a fairly fast pace, than if performed at irregular intervals, so slowly that each requires an independent effort of its own.

Stated in the way that I have stated it, this is a plea for the cultivation of Drill in connection with the daily routine of the ordinary industrial worker. This proposition may

¹ There is not very much music about a drum and fife band, but there is no better band to march to.

perhaps seem somewhat fanciful at first glance, and it may perhaps appear to call for that demonstration that we have a right to demand in the case of all new ideas before applying them to practical affairs. As a matter of fact, however, there is not really anything new about the root idea of my contentions this evening, while there exists abundant proof of their soundness from a business point of view.

Possibly some—but probably not many—of you have read some of the works of Dr F. W. Taylor, a Past-President of the American Society of Mechanical Engineers, who has practically given his life to the study of scientific management. In his book on *The Principles of Scientific Management* (published by Messrs. Harper Bros.) Dr Taylor tells us of several cases, which go far towards proving the efficacy of Drill as applied to the daily performance of ordinary manual work. It is possible that it may never have occurred to Dr Taylor that the scientific study of physical movements as applied to industrial production, and the scientific teaching of the best movements to make, and the proper way in which to make them, are essentially matters of Drill, or it may be that he deliberately avoided describing the scientific organisation of physical effort as a matter of Drill for political or psychological reasons. But, whether one calls it "Drill" or "Scientific Training," the facts remain the same, and, however much we may disagree on points of detail, we can none of us deny that the art of training men to go through the same physical movements rhythmically and simultaneously is essentially of military origin.

As regards its practical results in connection with various industries, Dr Taylor tells us that, as a result of enquiries, he found that men engaged in loading pigs of iron on to railway trucks at the Bethlehem Steel Company's works could, using their own methods, only load at the rate of $12\frac{1}{2}$ tons per man per day; as a result of Drill (and, of course, as a result of selection) he found it possible to increase the output to $47\frac{1}{2}$ tons per day. This, let it be borne in mind, is not a record of the achievements of one or two men of exceptional capacity, but the result of skilled training applied to suitable material—

of which, as a matter of fact, there was found to be no lack whatever

In another direction—in connection with bricklaying—it was found possible, as a result of scientific teaching, to increase the output from 120 bricks to 350 bricks per man *per hour*.

In yet another direction—the testing of steel balls for use in connection with ball bearings—it was found that, as a result of scientific teaching, 35 girls could do the work formerly done by 120, in spite of the fact that their hours of labour were shortened from $10\frac{1}{2}$ to $8\frac{1}{2}$ hours, and, further, that the accuracy of the work at the high speed was two-thirds greater than at the former low speed.

In each of these cases—and there is, so far as I can see, no reason whatever to suppose that they stand alone—it seems desirable to emphasise the fact that the health of the workers was actually improved by the change, thus showing that the so-called "new methods" were not mere methods of "nigger driving" under another name. We may surmise that the improved health was due to several causes. In the first place clearly the new methods cannot have involved any undue strain upon the worker. In the second place, the increased wages that the employer could well afford to pay under the new methods were clearly sufficient to enable the worker to purchase any additional food that may have been necessary to repair the increased waste of tissue—if indeed there were any increased waste of tissue arising from the substitution of scientific movements (alternated by scientifically arranged periods of compulsory rest) for the former haphazard and unscientific methods employed. In the third place, the consciousness of good work, well performed, has at all times a strong recuperative effect, while the shortened hours of labour would doubtless still further benefit the worker's health, *so long as the increased leisure was not misapplied*.

There is on the part of most persons a predisposition to believe that workers—and particularly "skilled" workers—have acquired traditionally a knowledge of the very best possible way of handling the particular class of work in respect of which they are supposed to be skilled, but I venture to

think that anyone who approaches the subject dispassionately will recognise not merely that a further study of the subject might suggest the possibility of improvement, but also that there are strong *prima facie* grounds for supposing that methods that are traditional are also antiquated, and that that which is antiquated is also inefficient, as judged by modern standards. More especially is this likely to be the case in connection with matters of science, and clearly a study of the principles by which power can be exercised as a result of physical movement is essentially a scientific question.

As one example of traditional methods—and I must content myself with one, as time presses—in connection with shovelling, the traditional method is for the worker, no matter what he is shovelling, to select a shovel of a size that he thinks best suited to his own particular physique, in the same way that one might select a cricket bat, a tennis racket, or a billiard cue. At the Bethlehem Steel Company's works (to which I have already referred) it was found that each shoveller owned his own shovel, and that he would frequently go from shovelling ore, which involved a load of 30 lbs per shovel, to the handling of rice coal, which (with the same shovel) involved a load of less than 4 lbs. As a result of scientific observation, Dr Taylor tells us it was found that a normal shoveller could work best with a load of 21 lbs per shovel, whatever class of material he was handling, and accordingly the Company now provides some eight or ten different kinds of shovels, each appropriate for handling a given class of material, not only so as to enable the men to handle approximately 21 lbs per movement (which experience has shown to be the most effective load), but also to adapt the form of the shovel to the nature of the material, so as to ensure its receiving its full load with a minimum amount of muscular effort. Doubtless, some of the more observant in past generations of shovellers may have noticed that a 30 lb. load of ore was too heavy for convenient handling, and that a 4 lb. load of coal was so light as to involve an unduly large number of movements to shift a given quantity, but probably this difference would have seemed inevitable to the intelligence of the average shoveller, who would probably

have passed for "mighty smart" among his mates, had he realised that the specific gravity of the ore was seven or eight times as great as that of the coal

But, quite apart from lack of observation (which is excusable on the part of the manual worker, because it is no part of his job to observe, to think, to notice, or to devise new methods), there is another factor that would no doubt tend to cement the so-called "tradition" that a man should always work with the same sized shovel, and that was the custom for employers of labour to expect the workmen to provide their own tools. So long, of course, as workers are expected to provide their own tools, so long will there be a natural tendency in favour of adhering to that which he is accustomed to, instead of seeking to ascertain how it might be improved upon, and so long will workers exhibit a tendency to go on using what they have got, simply because they have got it¹

In the past, as I have already said, the majority of employers have made little or no serious effort to train their workers in methods of efficiency, and it should, perhaps, be added that workers have shown very little inclination to be trained in new methods. If one of the results of the present War should be some realisation of the possibilities of a really practical system of scientific training—or (as I prefer to put it) of the application of the principles of Drill to civilian occupations—I venture to think that it will not be long before the economic waste arising from the War is made good, as a result of the adoption of better and more up-to-date methods of production in times of peace

¹ And, of course, because their financial circumstances naturally stand in their way when it comes to a question of capital outlay

LECTURE III

In the course of my lecture to you last week, I suggested that there might be scope for improving the methods of training men for many civilian occupations, by proceeding with that training to some extent on the lines of military Drill, and in support of this contention I pointed out to you that, in certain directions, very notable results had in fact already been achieved upon these lines in the United States, although the use of the word "Drill" had been carefully avoided in this connection. One can easily understand that the task of inducing workmen to depart from traditional methods, with the object of increasing their efficiency and working capacity, will at all times be one sufficiently difficult to make it undesirable to do or say anything that might tend to increase its unpopularity, and, in the past at least, the majority of English-speaking persons have been decidedly opposed to anything that savoured of compulsory military training. But I see no reason why, under present conditions, anyone should wish to gloss over the fact that the scientific training of the workman is—and must necessarily be—to a very large extent a matter of Drill (although of course its ultimate success will depend primarily upon the precise form of that Drill, which must in all cases be worked out carefully in advance, at first theoretically, and afterwards perfected by practising it upon a limited number of individuals in various alternative forms, until experience has arrived at what seems to be the best all-round method). We have, however, I think, now arrived at the time when the idea is likely to be more—rather than less—acceptable because it savours to some extent of military Drill, and accordingly I see no reason whatever why one should not draw attention to—and perhaps even emphasise—its essential nature, as a

scientific means of controlling the simultaneous movements of large bodies of men, with the object of achieving definite combined results

The next point to which I would like to direct your attention, in connection with our enquiry as to the differences between the military and civilian system of organisation, and as to the points on which they resemble each other, is that every system of organisation that is intended to achieve practical results must be capable of both expansion and contraction within very wide limits, without seriously affecting its efficiency at any given moment of time. This is perhaps a counsel of perfection, but directly one examines actual conditions one realises that this power of adaptation to varying circumstances is absolutely essential. In the case of a factory, a system of organisation that cannot produce a profit unless the works are fully employed is of very little use. Even supposing such a factory could be kept fully employed in times when trade is slack, the inevitable result would be that, in times of great business activity, many orders would be received that could not possibly be executed, with the result that the Order Department at least would be overworked, without any corresponding advantage being obtained, and with the further result (even more disastrous) that great dissatisfaction would be given to customers whose orders could not be accepted. Even supposing the demands of the regular customers of the factory had remained constant, and that all the excess orders had been received from strangers, it would be most undesirable for any business concern to acquire the reputation of being "always full up with orders," and therefore a house to which it was hopeless to look for required supplies. But, as a matter of fact, activity in trade in the great majority of cases does not so much produce new customers as an increased demand from existing customers. If regular customers are going to be told to look elsewhere for supplies in times of pressure—when of course, like everyone else, they have their own troubles to deal with—it is more than likely that an appreciable proportion of them will, as far as possible, take the whole of their business where they may receive prompter and more considerate treatment; thus the inevitable

result of such a business policy would be that, when the period of extreme activity was over, the factory would find itself with fewer customers than before, and accordingly without sufficient orders to keep it fully occupied, which (under the considerations we are assuming) would mean that it could only carry on business at a loss, until new customers could be attracted—an extremely difficult task, in view of the unenviable reputation that had been built up during the time of stress. It follows therefore that any concern, the continued existence of which depends upon its ability to make a profit (that is to say, in the long run, *every* business concern) must be possessed of an organisation so elastic as to reduce to a minimum the time when it cannot carry on business at a profit, owing to the absence of sufficient orders. It is hopeless to expect that there will never be times when orders have to be refused or deferred, or when operations can only be carried on at a loss, but manifestly there can be no abiding success unless these disadvantageous conditions are infrequent, save in cases where the business is one that (not being subject to competition) is able to charge exactly what it likes, and is therefore able to make such enormous profits under favourable conditions that it can afford to look with equanimity on frequent spells of disadvantageous conditions when business can only be carried on at a loss. In a free-trade country it seems safe to assert that no business houses occupy this happy position, and that therefore elasticity of organisation is an essential condition to success.

This elasticity in the case of business concerns means that as far as possible—and in all cases to a very large extent—working expenses must vary approximately with the turnover, so that the rate of profit may remain as steady as possible in both busy and slack times, but obviously it is easier thus to state the requirements of the position than to carry them out in practice. Broadly speaking, for our present purposes, we may divide working expenses into (1) cost of labour, (2) cost of supervision and general administration, (3) cost of raw materials; (4) cost of maintenance of equipment. As regards labour, there is not, as a rule, any theoretical difficulty about

adjusting the cost to meet the requirements of the moment, that is to say, the workers are probably employed on such terms that they can be discharged at short notice. But whether, having been discharged, they can be re-engaged at short notice when wanted later on is by no means so certain. An essential condition of successful management is that labour of the required description shall always be forthcoming in the required quantities, to handle any work that may have to be performed. The tendency naturally is for the workers to drift into the employ of those houses which, upon the whole, treat them best, and accordingly if the conditions offered by any one house are markedly inferior to those offered by its competitors, that house will always experience a difficulty in obtaining the services of the required number of workers of really desirable quality. Unless therefore the quality of the worker is a matter of little importance, and labour is always abundant, the employer—even if he does not pride himself upon being a “model employer”—is obliged to consider his work-people, at all events up to a point. This means that he cannot exercise to the full the right which he probably possesses in law, of dispensing with their services whenever he pleases, because, if he does, the difficulty and delay that he would experience in replacing them later on, when a rush comes, would cause him a greater loss.

As regards the cost of supervision and general administration, this as a rule can only be varied with the output, to the extent to which it may be found practicable to base remuneration upon profits. And the extent to which the total expenditure can be made to vary for this reason is in the majority of cases so slight that it would not be worth while instituting such a scheme (with its attendant complications) for this reason alone, however desirable it might be on other grounds.

As regards the cost of raw materials, theoretically it is quite possible to adjust the expenditure from time to time according to the requirements of the moment, i.e. according to the output of the factory, but, in practice, it seems safe to say that some modification is inevitable. If a manufacturer were invariably to buy from hand to mouth, he would always

be at the risk of suffering serious loss, and putting his customers to considerable inconvenience, owing to the difficulty of obtaining prompt delivery of materials in times of abnormal activity. Also, such an arrangement would necessarily involve his placing orders for the greater part of his materials just at the most unfavourable time, not merely as regards promptness of delivery, but also as regards prices—for prices naturally tend to rise when the demand is more than usually brisk. The manufacturer who bought his materials upon these lines would probably pay anything between (say) 5 per cent and 20 per cent more for them than he need pay if he watched the markets carefully, and exercised his judgment. Indeed, in some cases, it is only by judicious buying that really adequate profits can be obtained at all. Further, it may be pointed out that the slack times are naturally those when the largest proportion of the manufacturer's Capital is in a liquid form, and when therefore it is easiest for him to finance heavy stocks, but, naturally, they must be stocks of staple commodities, if he wishes to avoid undue risks.

As regards the cost of equipment—the cost of its maintenance, renewal and replacement, and the interest on the Capital sunk therein. In the nature of things, there can be little fluctuation from month to month, for the equipment has always to be kept efficient, so as to be ready for any influx of orders when it comes.

Upon the whole, therefore, it will be seen that such elasticity as a business organisation may possess (and some such elasticity is essential for success) will depend, not so much perhaps on organisation *per se* as upon the adaptability of the human beings whom it embraces, and the system of organisation that aims at developing human adaptability will, I think, for this reason always prove more successful in practice than a form of organisation that is purely mechanical, and entirely fails to take into account human feelings and human failings.

Now, if this applies with regard to civilian organisation, let us see how far it applies to military organisation, and precisely why it does not apply to any differences that we may be able to observe. The military organisation is clearly

exceptional—or at least different from the civilian—in many ways In the first place, the actual duties performed by an army in times of peace are limited to the perfection of its training for the performance of its real duties, which only become operative in times of war, on the other hand, no business house is occupied exclusively with the training of its personnel and the perfection of its equipment in slack times, so as to be ready to deal with industrial booms to the best advantage when they come Further, the alternations between slackness and activity in a business concern are as a rule more frequent—and perhaps less enduring—than are alternations between peace and war But before we go further into our enquiry, I may suggest that this comparison, even so far as we have taken it, suggests that *business houses might often occupy their periods of industrial depression to better advantage than they do, if they invariably occupied those periods in overhauling their methods, and devising better ones for the handling of business on a large scale later on*

Another essential difference between military and civil organisation is that the former, if it is to be effective, must possess a capacity for rapid expansion to a far greater extent than any business concern would ever be likely to require We regard it as phenomenal when a business house has increased its output threefold in (say) as many years, whereas the military machine may easily be expected to double or treble its strength in as many months, and even then may be called upon to expand further—with an expansion of equipment corresponding with its expansion of personnel I need hardly point out that such rapid expansion would be absolutely impossible, if the military organisation could not, and did not, claim priority over civilian organisations No matter what civilian employment they may have, Reservists must join the Colours when called upon, and Territorials must abandon their civil occupations when mobilised If further expansion is necessary, and more recruits are called for, so long as they can be obtained in the required numbers by voluntary enlistment, the voluntary system is naturally adhered to, as being the system likely, upon the whole, to

produce the best fighting material—and to produce it probably as quickly as arrangements can be made for its proper training—but, if necessary, of course, other means would have to be resorted to It is the power exercised by the State, and the force of the appeal that the State is able to make to the country, that renders this rapid expansion of personnel possible Business concerns have nothing in any way corresponding to it, accordingly, in the slack times which represent their times of peace, they are necessarily obliged to retain the services of more employees than they then require In this respect it will be seen that the economic conditions are altogether in favour of the military organisation But it is, of course, a very open question whether the necessary training of new troops can always be hurried forward as rapidly as the services of those troops are required in time of war, whether, even granting the general efficiency of the military system of organisation, too much reliance has not been placed on that efficiency, on account of the great saving in expenditure that it was thus possible to effect in times of peace It is also a very open question whether it is a sound business policy to curtail normal expenditure, when this can only be done at the risk of greatly increasing the abnormal expenditure that will have to be faced later on On the contrary, every consideration of convenience seems to point to the advantage of equalising expenditure as far as possible from year to year, bearing in mind that the taxable capacity of the Nation remains (approximately) uniform

There is, however, this important difference between the problem of military organisation and that of civil organisation, as regards capacity of expansion and contraction—that the essence of the military problem is the need to devise a scheme capable of dealing at the shortest possible notice with a situation that in point of fact *may* never arise at all, whereas the problem, as it affects civilian life, is merely a question of dealing with a situation which, if all goes well, is bound to arise in the course of the next few years at the outside This is an important distinction, which should certainly be borne in mind by all self-constituted critics of military organisation

For my part, I have no desire to be numbered among these, for—apart altogether from the fact that now is not the time to criticise our military organisation—my object in this short course of lectures is rather, if I can, to turn to account the events that are uppermost in all our minds, with a view to suggesting possible improvements in civilian organisation, as a result of comparison with the military standard. Obviously, therefore, it is no part of my programme to attempt any serious criticism of the latter. My object, rather, is to take advantage of the present occasion to suggest that, in matters of organisation, business men are not the only ones who have been doing pioneer work, that simultaneously (and, so to speak, on parallel lines) a good deal of very useful work has been done quite independently by soldiers—some of which may, I think, quite profitably be made use of, as suggesting a novel standpoint from which purely business organisation may be viewed and judged. In particular, I wish to suggest to you that organisation, like everything else, can be overdone. Nature resents the over-development of any single faculty, and is apt to rebuke by stunting the development of other faculties in consequence. If we attempt to over-elaborate our organisation, and to provide in advance a rule for every conceivable contingency, and a remedy for every hitch that we are able to imagine, the practical result is likely to be that, sooner or later, we shall find ourselves against some situation that we had *not* thought of, and accordingly have not provided against, and when it comes thus to dealing, against time, with the unexpected, we are likely to find that the over-development of our faculties of foresight has led to a decay of our natural faculties of improvising remedies to deal with troubles as and when they arise.

Passing on to another question, which is perhaps more particularly within my own sphere of observation, I would like to invite your attention to a consideration of the question as to how far the science of Accounting may be utilised as an aid towards systematising novel experiences. We are, of course, still not so very far removed from the days when the practical man of affairs was thought to be best able to demonstrate his

real abilities by working without the assistance of Accounting and pursuing his own course, free (so to speak) of clerical leading-strings Modern tendencies, in the direction of concentrating business in the hands of a limited number of huge concerns, have of course to a large extent demonstrated the absurdity of attempting to dispense with accounting records, of attempting to rely upon an overstrained memory for facts, and still more on the futility of relying upon the ability of any one human intelligence to collate these facts and, by mental processes alone, to draw reliable deductions therefrom Accordingly, the modern tendency is unquestionably to recognise the necessity of adequate accounting records, but old customs die hard, and this recognition is even now but grudgingly accorded In particular, there is still a regrettable tendency in times of pressure to throw all considerations of accounting overboard, and to concentrate attention on what is called "the practical side of the business"—*as though there could be anything more practical than an adequate statement of accomplished facts, so formulated as to provide a reliable basis for the formulation of future policy* I am quite prepared to admit that, when a man is fighting with his back to the wall, and has no idea whether his future will extend more than sixty seconds ahead, there is some excuse for him if he prefers to concentrate his energies upon the immediate present, accordingly I can make allowances (although, I am afraid, not very many) for the War Office, which, I am told, has for the time being abandoned all attempt to keep an account of its operations on the Continent But, because it is no part of my present programme to attempt to discuss the conduct of the War, I propose to say nothing further on this point, beyond making the somewhat obvious statement that the experience we shall be able to gain hereafter from this War must of necessity be very seriously curtailed by the absence of all reliable records of what is now being done. But, however much opinions may be divided as to the urgency of the situation here, and as to the essential necessity of leaving what we may call the practical side of administration unfettered by the accountancy side (which might, under the imperfect conditions that could easily obtain, involve delays

where delays are vital), I think that this condition of affairs may prove useful to us as a business community, if, taking the imperfections of others to heart, we realise in consequence how often it is the case in connection with civil life that urgently needed reforms in methods of accountancy are postponed—often indefinitely—merely because one is “too busy” to attend to them. In this connection “too busy” often means “too indifferent.” In civil life the times when one is “busy” are usually the times when one is making good profits, even if the methods employed are defective—and when, accordingly, the results of even defective methods are probably sufficiently good to prevent those methods being criticised as they really ought to be.

The fault here is essentially a fault of defective organisation. It means that the accounting side of the business has not been departmentalised sufficiently, and that, as a result, in times of pressure there is no one connected with the business who has sufficient leisure really to notice what is happening—to criticise existing methods, and to devise improved methods for dealing more adequately with conditions that are continually changing. In this country the supreme control of finance and accounting is invariably undertaken by the supreme head of the business, along with his other somewhat numerous and very varied duties, with the result that under the most favourable conditions the work is often indifferently performed, because it has to be undertaken by someone who has reached his present position through successes achieved in altogether different fields, and with the further result (to which I have already drawn attention) that it is a physical impossibility for him to deal adequately with both these branches of his numerous duties at times when he is already overdriven upon the more practical side. The result is that, in the vast majority of business concerns in this country, both finance and accounting are handled with far less conspicuous ability than the more practical branches of the business—with the further result that we have no regular class of really skilled financiers and business accountants, sufficiently far-seeing to be able to appreciate the very inferior character of the work performed in this

department, as contrasted with the work performed by administrators upon the purely business, or constructive, side. These may possibly seem to you to be somewhat extreme statements, but I hope in the course of the present lecture to show that there may, at all events, be something in them that merits further enquiry. I am convinced that, wherever impartial enquiry is conducted by competent persons, it will be found, very much more often than not, that there is more scope for improvement here—and more scope for increased profits as a result of improvements here—than in any other branch connected with the ordinary type of business concern.

"Finance," as the word implies, is the science of getting things finished, or settled. The function of those in charge of the finances of an undertaking is (or should be) to see that it is possessed of the necessary monies to discharge its liabilities as and when they fall due for payment. Quite contrary to the popular impression, finance, properly understood, has nothing to do with borrowing, except in so far as it may sometimes be found necessary to borrow money temporarily, in order to meet unusually heavy payments falling due immediately. Such borrowing, however, clearly does not "finish" the business on hand, or settle the outstanding transactions, all that it really effects is an exchange of creditors. In place of a creditor, whom we may not wish to ask to wait for his money—or who may perhaps be unwilling to wait, save on terms that are disadvantageous to us (as for instance, the loss of a cash discount)—we substitute a creditor who is willing to wait for repayment until such time as may have been arranged, upon terms satisfactory to ourselves. Yet it is significant of how little the real science of Finance is understood in this country, that the term "financier" is commonly applied, not to the man who is able to finance a business house successfully, but rather to the man who helps a business house to tide over its temporary difficulties by lending it money! There are still quite a number of so-called business men in this country who think that they have settled a trade account when they have accepted a bill of exchange for the amount due, payable at some future date!

Of course it goes without saying that, if a business house

starts with adequate capital, and trades at a profit, it will never experience any difficulty about finding the money necessary to pay its liabilities as they fall due, so long as it does not give its customers longer credit than it takes from its supply houses, and so long as its business does not increase, but difficulties will arise the moment it departs from either of these conditions, or the moment it distributes as profits more than the true profits that have actually been earned. The fact that successful business concerns so frequently do proceed upon these humdrum lines for many years on end has doubtless tended to produce the very prevalent impression that anybody can finance a successful business, from which proposition it is but a step to the converse—that no one can finance an unsuccessful business indefinitely, and that therefore no business requires a competent financial officer!

Business men in the United States may perhaps not be able to teach us quite as much as they think that they can, but it is at least worth our serious consideration that, in the United States, a business of any magnitude would, in the ordinary way, as a matter of course, be provided with an officer called the Treasurer, whose special duty it would be to look after the finances of the undertaking. In this connection it certainly seems not a little curious that, while we all recognise the need for a Treasurer in connection with charitable bodies, and similar concerns, no one over here seems to appreciate that the affairs of a business house—being necessarily far more complex than those of any charitable institution (or society) of a similar size—present even greater scope for skilled finance, and far greater prospects of pecuniary profit as the result of utilising this particular form of skilled knowledge. It is, moreover, not merely a question of scientific knowledge, it is, further, a question of the division of the labour of management, so that each portion of the duties of management may be adequately discharged at all times—even if they be times of exceptional pressure in some particular direction. The matter is the more important because, in the nature of things, the financial difficulties of every business concern will naturally arise in their most acute form when

that undertaking is working at full pressure, and when accordingly (unless there be a special financial officer) there will be no one to deal with financial difficulties who is not fully—and, in his opinion, more urgently—occupied in other directions.

Moreover, there is a great deal to be said in favour of subjecting all those charged with the spending of money (even the highest) to some sort of financial control. Until quite recent years this used to be recognised in connection with the affairs of the Nation. It used to be the duty of the Treasury to supervise all expenditure, and as far as might be possible to curtail it in the interest of the tax-payer, and, whatever the shortcomings of the Treasury may have been in other directions¹, it certainly used to exercise a very salutary power in this direction, without curtailing efficiency to any very serious extent. Quite recently this excellent system has been largely thrown into disuse by the establishment of the Treasury as one of the largest Spending Departments², without any sort of effective financial control above it. But the principle—at all events as it stood originally—is a sound one, that might, I think, well be copied by all business houses operating on a sufficiently large scale to be able to apply this particular form of the division of labour without seriously increasing administration expenses. To say the least of it, it is an excellent habit, not to enter into any obligation involving the expenditure of money without first seeing where that money is to come from, and this task, in the nature of things, can best be performed by someone not directly interested in the expenditure being incurred—by someone sufficiently high up to be able to criticise the proposed expenditure, with a view to insuring that all adequate steps have been taken to see that the same, or a similar, result could not have been obtained by a smaller expenditure on slightly different lines. For the financial officer to exercise control upon these lines at all effectively, it is obvious that he must occupy a position equal to—if not superior to—that of those in charge of the various spending departments.

¹ E.g. In blocking much needed reforms.

² E.g. In the administration of the National Insurance Act, 1911.

Similarly with regard to Accounting: essentially, Accounting is a question of recording accomplished facts; of recording the creation of legal obligations and their due discharge, of recording what is received or imparted (as the case may be) in exchange for obligations incurred, and the sources from which the liabilities are discharged, or (alternatively) the precise way in which resources have been increased by a discharge of liabilities on the part of others. In a word, Accounting is the record of what has been accomplished, designed, in the first place, to show the cumulative effect of accomplished facts, in the second place, to provide a basis for the intelligent criticism of administration, and, in the third place, to accumulate data to enlarge the experience of those responsible for administration, so that, as time passes, so far from it being wasted time, the benefits of past experience (which includes past mistakes) may be turned to account, and all may be made to work for the ultimate good. So regarded, it is obvious that the Accounts Department should be under the control of someone ranking at least on equality with the heads of all Administrative Departments, and that it should be supplied with an adequate staff, directly accountable to him—and to him alone. It is probably not overstating the case to say that in the whole of the business world there exists no Accounting Department organised precisely on these lines.

In quite small concerns the supreme control can easily be concentrated in a single individual, so long as he retains his health, and his capacity for (and desire to) work. Such an individual—if he be possessed of an ideal memory, and a capacity for correlating facts that is little short of genius—may be able to perform in his head all the functions of an Accounts Department, provided he has the necessary leisure, but unless these conditions obtain (and in the nature of things, they can never obtain permanently) the position of affairs most likely to exist will be one under which no single individual is aware of everything that is going on, and accordingly no one (however gifted) can exercise intelligent control without the assistance of an Accounts Department to collect and to co-ordinate information. In the nature of things, those who

have a first-hand knowledge of facts may be assumed to know best what is happening, but the knowledge of each is limited to his own particular sphere, and even there he is not an ideal recorder of facts, because he is himself an "accounting party," and therefore necessarily biased. In practical business one too often finds that the Accounts Department is in charge of a man not possessed of the necessary qualities to enable him adequately to discharge his important duties, and not possessed of the necessary authority to enable him to call accounting parties to book, in the sense of laying down rules as to when, and in what manner, they are to account.

Too often, also, the staff of the Accounts Department is defective in almost all important respects. It is a very common arrangement for all the new recruits—or at least all the new recruits above a certain educational standard—to be put first into the Accounts Department, until someone is able to judge as to their capacity. Then, from time to time, as vacancies occur, the pick of these members of the junior office, or "counting-house," staff are drafted on to other work that is more highly paid, with the result that the senior office staff consists of the superannuated remains of those of the junior staff who have been passed over for promotion! To those of you who have had no practical experience, this may seem to be a somewhat startling statement, but it is nevertheless literally true of probably the majority of manufacturing and trading concerns in this country to-day. In a more limited sense, it is probably true of every business house in this country. Being thus understaffed, in point of quality (if not of quantity), the Accounts Department naturally fails in initiative. The only work that it does really well is work that, under modern conditions, and in a large concern, could be very much better and more expeditiously performed by machinery¹!

I mention these matters because while doubtless we can all realise how essentially unbusiness-like it is for the War Office—in the present emergency—when it is conducting a business probably at least ten times as large as any that it

¹ Perhaps even, it may be news to some to learn that machinery can be used at all in connection with accounting records.

has previously conducted in the whole course of its career—to choose this particular moment for abandoning any serious attempt at keeping proper accounting records, few of those engaged in business appear to realise that, for all the good they get out of their accounts, they might almost as well follow the War Office's lead, and abandon them altogether. Few things are worth doing by halves, and most emphatically Accounting is not one of them. Indifferently performed, Accounting represents an almost complete waste of all the expenditure that is incurred in connection with it. Properly organised—so as to be the ally of the business administrator, instead of his natural enemy—the Accounts Department probably represents the best means at present available of effecting wise economies, and at the same time improving general efficiency. But, as a rule, the Department is so indifferently staffed, and works under such discouraging conditions, that its records arrive too late to be of any substantial use, and this chiefly because of the utter failure of even the most up-to-date business man to appreciate that there is as much scope for labour-saving appliances and modern machinery in his Office as there is in his Works.

It may be urged that, even supposing the accounts at present prepared are of little or no practical assistance to the Administrator, they yet serve their original purpose of providing Shareholders (and others exercising proprietary rights) with an opportunity of criticising business management. Such a statement is of course easily made, and it sounds as though it ought to be all right in practice, but one has only to look at the accounts ordinarily presented for the consideration of Shareholders to realise that, in at least nineteen cases out of every twenty, the only accounts available to Shareholders have been carefully formulated with a view to withholding information from them, rather than conveying it. It must be an extreme case of bad management before the facts are obvious on the face of the usual published accounts!

And yet experience teaches that few of us can afford to do without criticism, and few indeed are capable of their best efforts without the spur that reasonable criticism undoubtedly

provides It is too early for us yet to see the full extent of the losses we shall be called upon to pay hereafter as a result of the present political truce, and the present system of censorship, but that the system now in force has its disadvantages as well as its conveniences will doubtless readily be admitted by all who give the matter even a moment's consideration Doubtless in all cases, whatever the subject-matter may be, a great deal of criticism will be not *bonâ fide* and the majority will be ill-informed, but, trying as malevolent or unintelligent criticism may be to the man who is honestly endeavouring to do his best (perhaps under unparalleled disadvantages), it does not follow that it will invariably be uninstructive Nor does it follow that all criticism should be barred, because the majority of it is useless Probably every one knows, as a matter of practical experience, that it is occasionally possible to secure a very valuable suggestion from criticism that in itself is quite ill-informed If one be really seeking new ideas, one cannot afford to muzzle honest criticism, even on the part of the uninitiated On the contrary, it is always worth while to invite suggestions, and the consideration of such suggestions as may be received is never altogether wasted time In one sense at least we all admit this We probably all think that, if we had the opportunity, we could manage our War Office better than Lord Kitchener, and lead the Russian Armies better than the Grand Duke Nicholas, although, of course, honesty compels us to admit that we are quite without any experience as to their respective duties But, on the other hand, there can be no doubt that we are all naturally inclined to regard those who criticise *us* as interfering busybodies, who deserve to be snubbed

If criticism has no other virtue, it has at least the capacity, when seriously regarded, of compelling one to take another's point of view, for, naturally, the first thing to be done, when attempting to handle criticisms or complaints is to endeavour to grasp the mental standpoint of the other side Until one has reached that point, any answer that we may make to the criticism will be entirely without weight As often as not, the critic will think we are talking about something else

altogether, with the express object of confusing the issue. If, on the other hand, we honestly approach the matter from the point of view of the critic, and endeavour to find out in the first instance wherein lies the ground of his complaint, it is, to say the least of it, possible that we may find in his point of view something quite unexpected, which, even if it does not suggest to us that his criticism is well founded, will at least put us in touch with a new idea (possibly unsuspected even by our critic) that may yet be turned to good account

We are all so constituted that we naturally think that we could manage the business of others far better than we see it managed by them, and they, in their turn, doubtless think the same about us. In the vast majority of cases, doubtless, such an impression is not justified by the facts, but there is usually behind it some glimmering of truth—not because "the onlooker sees the most of the game," for as a rule he does not, but because the onlooker, being detached, may sometimes perceive (and draw our attention to) something which, because it is so very close under our nose, has altogether escaped our observation.

Judged by civilian standards there is doubtless a good deal to be found wanting in military methods of administration, and doubtless military administrators (like others) make mistakes. When they do the mistakes are apt to be huge mistakes, because they are dealing with big things. On the other hand, in the past—in connection with the Army Classes held at this School—I have known Army Officers to pass criticisms on accepted civilian methods of business, which, however heretical they may seem, have often appeared to me to be peculiarly instructive. Under present conditions our Army Officers are, of course, much too fully occupied to be engaged in criticising business methods, but it is, I think, open to us all to get something of the benefit of such outside criticism by comparing military organisation with our own, whatever it may be. It will be strange if, as a result of viewing matters from this new standpoint, we cannot hit upon some new idea which is at all events worthy of consideration, if not of actual adoption.

LECTURE IV

The next point that I want to discuss with you in connection with our present enquiry is the question of Waste, and the means that it may be practicable to employ to reduce to a minimum the losses arising from this cause

It will perhaps not be altogether unprofitable, if we consider the derivation of the word "waste," with a view to arriving at some idea of the various meanings that have been attached to it from time to time. Originally the word was identical with "vast", but its original meaning was quite different from the modern meaning of "vast"—which is enormous. The Latin word *vastus* merely means "empty", accordingly the original conception of the word "waste" implied some appreciation of the futility of mere accumulations of natural wealth, situated so remote from centres of population that they could not be turned to practical account. We get the same idea expressed in the word "desert". To us the word "desert" suggests land that is of no practical use whatsoever, because it is incapable of cultivation. The old idea, on the other hand, was that a desert was an uninhabited region—a region deserted by mankind possibly, but by no means necessarily so on account of its aridity. We thus see that, as originally conceived, what was recognised as Waste was primarily that which (for one reason or another) was practically inaccessible, that which could not be turned to account because of the natural difficulties encountered by mankind in their attempts so to deal with it. Now, when we speak of Waste, we ordinarily mean something quite different—losses arising through the actual efforts of mankind, through their apparent inability to achieve an advantage in one direction, without as a result producing losses (or disadvantages) in

other directions The real significance of all this lies in the fact that, so far as Waste may be the result of human intervention, it is (to say the least of it) well worth enquiry whether it is altogether unavoidable

From the history of the word, as I have briefly traced it, it is clear that the ancients did not appreciate that there was such a thing as man-created Waste Their conception of a Waste was rather a conception of wealth, but of wealth unobtainable by reason of human limitations Of the two, this is certainly the more hopeful view, but we should of course be quite wrong if we supposed for one moment that there was in fact less human waste under ancient, or mediaeval, civilisations than under our own The truth seems rather to be that the ancients altogether failed to appreciate the fact that their imperfect methods of civilisation did in fact create wastes (or losses) that were really far more worthy of their attention than the imagined wealth that might lie concealed in inaccessible deserts Still, I think we should be grateful to them for this recognition of the kind of waste that is really inevitable, if only because the idea serves to draw our attention to the fact that the wastes created by human imperfections belong to a quite different order of things, and are not necessarily unavoidable, merely because there must always be some waste in nature

In connection with manufacture, the truth of this point of view is already to a very large extent admitted It is, I think, now fairly well realised that all manufacturing processes are somewhat akin to chemical processes, under which the preparation of any desired chemical compound necessarily involves incidentally the preparation of other chemical compounds that are not "desired," but are merely incidental Formerly, these undesired compounds were regarded as "waste products," and were in fact wasted sometimes even, large sums were expended in carting them away, or otherwise disposing of them But modern science has now, for many years past, been carefully considering the problem of waste products in connection with chemical manufacture, and all kindred manufacturing operations, and has succeeded, to an extraordinary

extent, in turning what were formerly regarded as "waste products" into "by-products", and it has shown itself very ingenious in the way of finding new uses for these by-products, so that, in some cases, what we might regard as the "centre of gravity" of the business has been entirely shifted, until that which was originally a waste product, and subsequently a by-product, may sometimes ultimately become the chief product Under exceptional conditions, the position may be so completely altered that chemical processes may now be followed solely (or almost solely) for the sake of producing what was formerly regarded as a waste product—the original main product having become in its turn the "waste" product, because it cannot be handled to commercial advantage under local conditions Great strides have been made in this direction in connection with almost every kind of manufacture where the services of skilled chemists can be utilised to advantage, but, so far, little seems to have been done in the way of similarly avoiding waste with regard to ordinary manufacturing processes, save in so far as transport facilities may have enabled manufacturers to find distant markets for unregarded by-products which were formerly quite unsaleable There can, I think, be no doubt whatever that the finding of markets for so-called "waste" products in connection with manufacture is one of those branches of practical business science which provides the greatest scope for scientific ingenuity

You may ask what all this has to do with the War, even supposing that its connection with business methods is sufficiently obvious The answer, I think, is that War—being what it is essentially the science of destruction—is of necessity the greatest producer of waste, in the modern sense of the term, that can be conceived But, just for this reason, that huge wastes are an inevitable feature of modern warfare, there would seem to be all the more scope for intelligent scientific enquiry, as to how far such waste is really essential (and is accordingly to be regarded as evidence of efficiency), and as to how far it is the result of imperfect methods (and must accordingly be regarded as evidence of inefficiency) No Nation, however wealthy it may be, can afford to carry on operations—

no matter how vital those operations may be to its interests—absolutely regardless of cost There is no such thing in this world as a bottomless purse Accordingly, no matter how paramount may be the importance of waging war effectively, the question of waging war without undue waste must always be a matter of supreme importance This is not a question of mere cheese-paring It is not a question of hesitating to spend where expenditure is necessary, or of hesitating to spend quickly where quick results are essential, indeed, primarily it is not a question of spending at all, but rather a question of considering how far it may be possible to avoid waste (or loss) by making the best possible use of those by-products of expenditure that will inevitably be waste products unless some use can be found for them The suggestion I put forward under this heading is that, in the same way that enormous strides have been made by scientists in discovering uses for what used to be regarded as waste products in connection with civilian occupations during the past half-century, so, even in connection with so essentially wasteful an occupation as War, there may be scope for the employment of Comptrollers of Waste—practical men, possessed of the necessary scientific knowledge—deputed to study the conditions, to make enquiries as to what the waste products are, and as to what uses it might be possible to make of them, either now or hereafter If it were any part of my present object to criticise the manner in which this War is being waged at the present time, it would be an easy matter for me to give examples of waste (and perhaps not a very difficult matter, in some cases, to suggest how losses arising from such wastes might be reduced), but my present purpose is quite sufficiently served by suggesting the scope for the use of scientific knowledge in this direction not when the War is over (and when accordingly it may be too late to use the knowledge to the best advantage), but now, while the waste is proceeding, and while there might be a real opportunity of benefiting by practical recommendations for the turning of such waste products to the best account Obviously, however, scientists could not very reasonably be expected to accomplish much in this direction while the present

conditions obtain, under which no records are being preserved to show, even approximately, what is being done

Now let us turn to another matter altogether—in connection with which there is no necessity to comment upon military methods, because the matter is essentially one for business men, and for them alone—I refer to the movement now on foot in this country for what has been called “The Capture of the Enemy’s Trade” In one sense, of course, while the War lasts the capture of the enemy’s trade follows as a necessary consequence Even if none of the numerous emergency Acts of Parliament had been passed, and none of the numerous Royal Proclamations had been promulgated, warning all and sundry against trading with the enemy, the fact that we are at war would have made illegal—and (what is perhaps more to the point) would to a very large extent have prevented—our trading with enemy countries That is to say, the War has *de facto* put an end for all practical purposes to trade between this country and Germany, or its Allies Trade on a very limited scale might perhaps be carried on *sub rosa*, through the intermediary of neutral countries, but—if only on account of the sheer impossibility of those neutral countries handling—still less financing—the vast volume of trade that used to be carried on with enemy countries, in addition to their own—any leakage that might arise through neutral countries might well be left out of the question for our present purposes, however objectionable or undesirable it may be for military, or other, reasons The fact that we are at war substantially destroys trade between us and our enemies, and that means that the export trade of Germany, Austria-Hungary and Turkey is at an end so far as our Home market is concerned By the operations of our fleet it has also, to a very large extent, been brought to an end so far as neutral markets are concerned, save in the case of countries adjoining enemy countries where, of course, our fleet is powerless to prevent the transport of goods Accordingly, from one point of view, without any particular effort (and certainly without any particular merit) on the part of our manufacturers and merchants, it may be said that we have “captured” the enemy’s trade to a very large extent,

although we may yet have to compete in the Home market—and to an even greater extent in colonial and neutral markets—with traders of neutral countries

We need, I think, have no hesitation as to whether we are entitled thus to attempt to bring economic pressure to bear upon the enemy, nor, for the matter of that, does one see any signs of hesitation upon this score. The point, however, that I wish to suggest to you in particular is that there is little to be gained by "capturing the enemy's trade" if we cannot subsequently hold it. Doubtless the present conditions arising out of the War are favourable to us for the time being, in the sense of giving us an opportunity of getting an entry (or re-entry) into neutral markets for which we might otherwise have waited for a very long time in vain, but, however much our armed forces may assist us to "capture" the enemy's trade during the continuance of the War, they will be of little use to assist us in holding that trade when the War is over, unless in the meantime our traders have done something to make good the position. What we really require to do now, if we are to secure any permanent advantage in this matter, is, not so much to "capture the enemy's trade," as it is to "captivate the enemy's customers"—to induce in them such a frame of mind that, even when conditions return to the normal, they will prefer to continue to trade with us, rather than revert to their former practice of placing their orders with our present enemies.

It is, I think, by no means unlikely that this point has been duly appreciated at all events by the more far-seeing of our business houses, but certainly so far very little seems to have been said, or written, with a view to emphasising the fact that, if we want to hold the enemy's trade after the War is over, it will be necessary for us to deserve it. On the contrary, a good deal has been said, and a great deal has been printed, with a view to showing that the Germans have only been able to hold their own in neutral markets by methods which for all practical purposes are fraudulent methods! One does not, of course, wish to attach too much importance to utterances of this kind, for when feelings run high it is inevitable that extravagant statements should be made. At the same time,

it is, I think, very undesirable that our traders should be encouraged in believing that all they have to do is to adhere to their present methods that, so long as they do that, now that they really have "a fair chance" in neutral markets, they will be able hereafter to retain their hold against all comers As a matter of fact there are probably few occasions on which the British trader has made a more colossal mistake He was so obsessed with the idea that the German manufacturer could not compete with him, save by fraud, that he secured (in 1887) the passing of the Merchandise Marks Act, under which all manufactured goods imported into this country are required to be marked plainly with the country of their origin, with the result that the British public—unobservant as it is—soon found that the legend "Made in Germany" was not invariably indicative of low quality It was, however, in neutral markets that the Merchandise Marks Act gave our German competitors their finest advertisement At the time it was enacted, practically all the South American and Far-Eastern trade was done through British houses, whose customers bought goods because they liked them, without knowing (and probably without very much caring) where they came from, when, however, they began to notice that a very large proportion of the goods that they liked best were marked "Made in Germany," it was literally a revelation for them, for probably up till then they had no idea that Germany could do such good work Thus, the Merchandise Marks Act, which was originally framed as a measure to protect the British manufacturer against unfair competition, in fact gave the German manufacturers the best possible advertisement among the customers of British export merchants throughout the world! Its practical effect would of course have been entirely different, had it been the fact that German manufactures were invariably inferior to British manufactures.

If the facts be viewed dispassionately, it must, I think, be conceded that, in the great majority of cases, we Britishers were first in the market, and that, in so far as we have been ousted by the Germans, it has been not by fraud (for there seems no reason to suppose that these neutral markets are

controlled by exceptionally gullible persons), but rather by a combination of qualities that may shortly be described as superior efficiency. The British manufacturer is never tired of endeavouring to persuade himself that German goods are inferior to British goods. The truth, on the other hand, would appear to be that the German manufacturer exhibits a greater intelligence, and shows a better appreciation of the requirements of his customers by manufacturing goods of the precise quality that his customers require. This may seem a startling statement, so I will explain what I mean in greater detail. To take two extreme cases. The Germans have in the past largely controlled the textile trade with South America, as I understand, solely because they have been willing to supply at a fair price cotton goods of a quality inferior to any that British manufacturers would send. It is useless for the British manufacturer to argue that he gives better value for money, because his goods have greater wearing qualities than those of his competitors, if those who buy the goods are not looking for wearing qualities—if they prefer goods that will not last, and therefore have frequently to be replaced. In South America at least there is a good trade to be done in fabrics to be made up into dresses that are only intended to be worn once, and the manufacturer who fails to recognise this fact can, I think, only be regarded as the manufacturer who does not know his market. At the other end of the scale, there is the case of scientific instruments. I am told that it may be an open question as to whether those made in the United States or those made in Germany are the better, but when cheapness is no particular object, and the requirement of the customer is to secure a really good-class article at a fair price, the British manufacturer in this particular line often comes in a bad third. Here again, the suggestion seems to be that the British manufacturer has framed his policy rather upon his conception of what the requirements of his customers ought to be, than as a result of a careful enquiry as to what the requirements of his customers really are. And if we find this same frame of mind interfering with the conduct of business at both extremes of qualities, it is, I think, not altogether

unlikely that the same mental attitude stands in the way of the British manufacturer of many classes of goods that come between these two extremes We all know of our own knowledge (or at least I think that we all think that we know) that the British manufacturer is—to say the least of it—inclined to think that he knows better than his customers what they want, that he does not show himself, and never has shown himself, keenly receptive of new ideas coming from outside, or quick to turn those ideas to account by manufacturing to fill a new demand At the risk of going perhaps too much into technical detail, I would venture, as a possible explanation of the uncompromising attitude of the average British manufacturer, to hazard the suggestion that he is averse to laying down new Plant to fill new demands, because he is sceptical as to the permanence of those demands, and because in general he has no idea of laying down Plant to fill a purely temporary demand All his Plant is designed to last as long as possible, he has never seriously considered (as the Americans and the Germans have) the idea of laying down cheap Plant to fill a temporary demand Nor have our engineers given much attention to the idea of designing Plant to deal with conditions so novel that the requirements of the position are not yet standardised Accordingly, it is impossible for our manufacturers to produce articles for which no permanent demand can be expected, at prices at all near to those at which our more scientific competitors can produce them Until this ultra-conservative frame of mind is definitely abandoned, and until our engineers will seriously study the science of producing "light" Plant, there can be no question of our permanently holding the bulk of the trade in any industry that is subject either to extremes of fashion, or to rapid scientific development Certainly there does not seem much to be gained by British manufacturers laying down additional Plant to fill orders during the continuance of the War, unless they can be reasonably satisfied that, at the conclusion of the War, they will be able by their own merits to retain the trade that they have "captured", and no amount of legislation, designed to protect them against foreign competition after the conclusion of peace,

is likely to be of any permanent assistance to them—for, even supposing the inhabitants of these islands should be content to submit to a system of protection, we may be quite sure that the buyer in neutral markets will do what he has always done, to the best of his knowledge and ability, and buy to the best advantage If our manufacturers can be persuaded that they must substantially improve their methods before they can expect to obtain any permanent advantage from the present interruption in German trade, there is (so far as I know) no particular reason why the advantages that they are now in a position to reap should not be permanent, but what is most urgently required to bring about that position of affairs is, not the passing of an ingeniously framed scheme of "protective" legislation, but a frank admission of past shortcomings and a firm determination to put them upon one side, once and for all

I should be going too far outside my subject, if I were to attempt to discuss with you all—or anything like all—the emergency legislation that has been inflicted upon us since last August That much of it was prepared in haste was of course inevitable, but that because it was prepared in haste it should be prepared hastily was not quite so inevitable Considerations of time compel me to abandon any attempt at criticising emergency legislation from the point of view of discussing its precise legal effect, but there is one matter of considerable importance that is very much more a question of business methods than a question of law, and therefore does seem to come well within the scope of my present lectures As you are doubtless aware, the London Stock Exchange was closed by order of its Committee on the 31st July, 1914 At a later stage, while the Committee was endeavouring to make such arrangements as were a necessary prelude to the resumption of business by the House on a reasonable basis, the Treasury intervened Apparently the Treasury was under the impression that it was against the interests of the State for the Stock Exchange to re-open under such conditions as might provide our enemies with an opportunity of selling their holdings of international securities in our markets, and thus drawing money out of this country It is unnecessary for our present

purposes to enquire whether members of the Stock Exchange might, or might not, have been relied upon to safeguard us against this contingency. The fact remains that the Treasury obtained the promise of the Committee, not to re-open the House without the Treasury's sanction, and, in exchange for this undertaking, the Treasury seems to have encouraged the Joint-Stock Banks to offer accommodation to Stock Exchange men, which in all probability they would have been equally willing to offer them without the Treasury's intervention. If I were to discuss the whole subject from the point of view of Banking and Finance, it would no doubt be very interesting to trace these negotiations through in further detail, but for my present purpose the general position has been sufficiently indicated, as the point I wish to emphasise is the obvious desire of the Treasury to prevent the Stock Exchange being used by our enemies as a "dumping ground" for international securities.

With that object in view, when the London Stock Exchange was re-opened on the 4th January, 1915, members found themselves subject to various Emergency Rules, designed to restrict dealings. One of these required members to obtain a declaration as to their nationality from all clients—whether buyers or sellers. Others required full particulars of the securities sold to be given at the time, to be followed by evidence designed to show that the order was not on behalf of or for the benefit of alien enemies, either directly or indirectly. The absurd restriction as to the nationality of *buyers* has already been removed, but, apparently, it took the Treasury nearly three weeks to realise that if our enemies care to buy our securities and pay good money for them, such transactions in the nature of things can do us no harm. On the other hand, the Treasury does not appear even yet to have realised that the so-called safeguards it has provided, with the avowed object of making it impossible for our enemies to unload their securities here in exchange for cash, are absolutely useless as a means of achieving any such purpose. This statement may possibly seem a little startling, and, as the point does not appear to be very generally appreciated, perhaps you will allow me to elaborate it in further detail.

Let us suppose that Broker A (a perfectly respectable and patriotic member of the London Stock Exchange) receives an order from his client B to sell £100,000 X Y Z. Bonds Client B (we will say) is the London Manager of a firm of neutral Bankers Under the present regulations, A is required to make a declaration¹ that the £100,000 X Y Z Bonds to be sold have been in physical possession in the United Kingdom since the 30th September 1914 and have not since the outbreak of the war been in enemy ownership There is no question (let us say) as to the *bonâ fides* of B, who is readily able to give the required assurance, and could easily prove its truth up to the hilt if necessary All formalities having thus been complied with, A effects a sale of the Bonds, and in due course hands his cheque for the net proceeds to B, who is then at liberty to remit these proceeds to any part of the world outside of enemy territory let us say he remits the proceeds to headquarters, whether he remits them specifically, or as part of other remittances on general account is not very material for our present purposes What I have described represents the whole transaction, so far as it is known to A—so far, possibly, as it is known to B It may, however, quite conceivably be only part of a much larger transaction Let us suppose that C is the General Manager of the neutral Bank, whose headquarters are in some neutral country—Holland, Sweden, or elsewhere C may have been approached by D (the local manager of a German Bank) who, having ascertained that the neutral Bank possesses £100,000 X Y Z Bonds that it does not want to sell, may have suggested to C that, in the event of B being able to dispose of these in London for cash, D will sell the same quantity of the same Bonds to C for (let us say) 2 per cent less Thus, for all practical purposes the neutral Bank is employed to sell securities in London on behalf of the German Bank, but the transaction is rendered possible under existing regulations without any bad faith on the part of the London Broker, or (possibly) on the part of the London Manager of the neutral Bank, because the securities selected by the German Bank

¹ The declaration must be made by "a Banker, Broker, or other responsible party" Accordingly, it might be made by B

for realisation are of a description that the neutral Bank has possessed for some time past In this way a neutral Bank might, at discreet intervals, realise the whole of its investments in London for cash, and replace them by buying exactly similar investments from Berlin, making a somewhat tempting commission on the business, while a German Bank can by this indirect means, with but little difficulty, sell in London any kind of security that it wishes to dispose of, so long as it can find a neutral Banker willing to assist it, and already possessed (in the United Kingdom) of the desired quantity of the stock that it wishes to sell Doubtless, if selling orders reached undesirable proportions, London jobbers for their own protection would refuse to deal, but the point that we are considering here is not the protection of the London jobber, but the protection of the British Government's store of gold The regulations so far devised for protecting this against demands arising through the "dumping" of securities held by enemies appear to have been singularly ineffective.

When, however, we come to view the matter from a business standard, we may well ask ourselves whether there can be such a thing as a neutral Regarded as a legal abstraction, neutrality is of course easily conceivable, but, regarded as the frame of mind of a human being towards a controversy which (to say the least of it) has aroused widespread interest, the idea that individuals can remain neutral is as fantastic as it would be to suppose that they could all remain judicial It is, I think, a perfectly reasonable assumption for a business man, to proceed upon the line that there are no such things as neutrals, that those who, for whatever reason, are taking no active part in a widespread controversy must be assumed at least to sympathise with one side or the other That their sympathy may not be open sympathy has little to do with its sincerity. However that may be, it is unbusiness-like to rely upon the neutrality of the private citizens of neutral States further than we are able to supervise it, and any system that assumes that strict neutrality will be observed by all neutrals is, I think, likely to prove unworkable in practice

Now I pass on to the last matter to which I wish to direct

your attention in connection with this course of lectures, and that is the valuation of Securities for Balance Sheet purposes during the present emergencies. It has been stated in the press that the Board of Trade (which, as you are doubtless aware, exercises some supervision over the preparation of the accounts of all companies conducting an insurance business) has intimated that it will be satisfied, if, in Balance Sheets dated December 31, 1914, these companies value those investments that they have then held for twelve months or more on the same basis as on 31st December, 1913, and if they value investments acquired during the year 1914 at cost price, or under. If there be any truth in this statement, I think it shows a deplorable ignorance of the essential principles that should govern the valuation of investments for Balance Sheet purposes. On the other hand, if the statement to which I have referred should prove unauthorised, I still think it worth while for me to devote some attention to the matter, for there can be little doubt that in many quarters—not merely in connection with insurance companies—an effort will be made to justify Balance Sheet values based on these, or other equally unscientific lines.

It stands to reason that principles that are really worthy of the name will hold equally good in abnormal as well as in normal times, and that, therefore, no matter how exceptional present conditions may be in some respects, they cannot justify any departure from accepted principles that really *are* principles, as distinct from rule-of-thumb methods. The trouble seems to be that, in the past, we have been quite content with rule-of-thumb methods so long as the results that those methods produced were sufficiently conservative. Now we find that under present conditions these methods are somewhat exacting, and where they are inconveniently exacting there is very naturally an endeavour to get away from them, and to replace them by some more convenient standard. There can be no possible objection to that, so long as the new standard *is* itself based upon scientific lines, but, in the nature of things, there can be nothing scientific about a basis of valuation that is admittedly twelve months out of date. Let us therefore, in the time that now remains to us, consider what

really are the principles underlying the proper valuation of investments for Balance Sheet purposes

Hitherto, the view taken with regard to the proper valuation of investments in the Balance Sheets of ordinary business concerns has been that when those investments can fairly and properly be regarded as "fixed" assets they may be valued at cost price, unless they are of an inherently wasting character, in which event due provision must be made for their wastage, or depreciation, but that, subject to such provision for depreciation as may be necessary owing to inherent wastage, cost price is a reasonable basis for Balance Sheet values, because the distinctive feature of a "fixed" asset is that it is one that is *not* intended to be realised, but one that it is intended to hold in its existing form, and to use as a profit-earner—i.e. (in this case) as a producer of income in the form of dividends declared on the investments. On the other hand, in the case of temporary investments, the rule hitherto recognised has been that a temporary investment must rank as a "floating" asset—i.e. one that it is the object of the holder to convert into cash at the earliest convenient opportunity, one, accordingly, which must necessarily be valued according to the price it would fetch if sold. Thus, the practice has been to value temporary investments for Balance Sheet purposes at realisable prices.

Present conditions make it difficult, if not impossible, to say with certainty what price any considerable holding of any kind of Stock Exchange security would realise, if now sold¹, but an even more important factor in connection with the present condition of affairs is the shrinkage in Stock Exchange values that has been caused by the War, which, apart altogether from artificial restrictions (such as those imposed by the Treasury), has tended to reduce the investing power of many members of the community, and has tended to discourage buying on the part of others, partly from the fear that prices may go lower, and that therefore the present is an inopportune moment for buying, and partly from the fear that, if, later on, they should want to realise holdings, they

¹ Moreover, "minimum prices" are not necessarily realizable prices.

may find it impossible to do so—or at least impossible to do so without facing somewhat serious loss. Accordingly, there is not now—and there has not been since the commencement of the War—any inducement for the business man to invest temporarily monies which for the moment he cannot utilise to advantage in his business, and this absence of present buyers of securities naturally makes it difficult for those who may wish to sell to find a market for their holdings at anything like normal prices. Thus the present position is such that, even if marketable prices could be ascertained in connection with all securities, the use of such prices as a basis of valuation in current Balance Sheets would involve the admission of serious loss in the case of all but a very few securities.

As a matter of strict law it is a very open question whether such losses—even if admitted—need be taken into account when arriving at divisible profits. On the contrary, the recorded cases seem to suggest that—in the case of ordinary business concerns—such losses, even if admitted, would be losses chargeable against Capital rather than against Revenue, but, for obvious reasons, business concerns hesitate to publish accounts showing losses of *any* kind, if by any legitimate means they can avoid doing so. The fact that the Board of Trade has, in the case of insurance companies, sanctioned a basis of valuation that would fail to disclose such losses, shows, I think pretty clearly, that in the opinion of the Board of Trade they need not be taken into account in arriving at divisible profits, but the point that I now want to suggest to you is that the Board of Trade, in sanctioning a basis of valuation which is admittedly no real valuation at all, has sanctioned something that is essentially unscientific, and therefore (if for no other reason) indefensible.

I would like to put the matter before you in another way altogether. The distinction between “fixed” assets and “floating” assets which has always been recognised by accountants and business men is not a purely academic distinction, of no practical importance whatsoever, but is in fact—however little the real significance of the fact may have been apprehended—the recognition of a real scientific truth. In framing the

Balance Sheet of an ordinary business concern, what one is attempting to do is, not to prepare a statement of affairs showing, on the one hand, the outstanding liabilities of the undertaking, and, on the other, the amounts that its possessions would fetch if they were realised forthwith for the purpose of discharging those liabilities An enquiry of that description in the nature of things can serve no useful purpose whatever, unless the position of the affairs be such that all the liabilities are reasonably likely to mature for payment simultaneously, and there is accordingly a reasonable prospect of all the assets having to be realised for the purpose of satisfying them The true function of the ordinary annual (or half-yearly) Balance Sheet of a business concern is, rather, to show the nature and extent of its uncompleted transactions On the one side it records those receipts which have still to be accounted for, and which therefore (for the purposes of account) rank as liabilities of one sort or another Some of these are debts due to strangers maturing at certain (or uncertain) dates in the distant future others are receipts in the nature of liabilities to strangers that will mature due for payment in the ordinary course of business within a comparatively short space of time, and which accordingly will have to be provided for within that space of time others are receipts which have to be accounted for to the proprietors of the undertaking, but not until a winding up is in contemplation while others, again, are receipts by way of profits, which will have to be accounted for to proprietors in the near future in the form of dividend, and which (in so far as they will have to be accounted for in the near future) must now be provided for Broadly speaking, these comprise the items upon what we call the "liabilities side" of a Balance Sheet In one sense they are all liabilities, but they are divisible into two quite distinct kinds liabilities that will have to be met in the near future (and for which, accordingly, provision must be made), and liabilities which will not have to be met in the near future (and for which, accordingly, it is not essential that provision should be made until they mature —so long, of course, as there are reasonable grounds for supposing that, when they do mature due for payment, they can

be met). These two kinds of liabilities are, by convention, respectively known as "fixed" and "floating" (or current) liabilities

On the other side of the Balance Sheet, assets are similarly capable of being classified into "fixed" and "floating" assets. For a Balance Sheet to exhibit a financially sound position of affairs, it is essential that the floating assets should possess that quality of liquidity (or realisability) that will enable them to be turned into Cash sufficiently rapidly to provide for the payment of all floating liabilities, as and when they mature due. You will recognise that what may properly be regarded as a "fixed" liability in one year may mature into a "floating" liability in a subsequent year, and that accordingly the proportion of assets that must be capable of realisation will vary from time to time according to circumstances. Thus, an issue of Debentures, due (let us say) 20 years hence, may for the time being be regarded as a fixed liability, but by the time that issue becomes repayable, it will have matured into a floating liability, and, to make effective provision for its ultimate repayment, it may be only prudent to accumulate floating assets from year to year for many years before the actual date when payment matures.

As it seems to me, the scientific principle that underlies all this is that the real test, as to whether any given asset is a floating asset or a fixed asset, depends upon whether *it will have to be realised*, that, so long as there are sufficient floating assets to meet all floating liabilities as and when they become due, *all other* assets may for the time being be regarded as fixed assets, and yet a perfectly satisfactory state of financial equilibrium will exist. I think therefore, that, so far as the proper valuation of investments is concerned the true principle governing the question is that, in so far as it is clear that investments need not be realised to provide for the payment of current liabilities as they mature, such investments may for the time being be regarded as fixed assets. In the case of life insurance companies carrying out a reasonable amount of new business from year to year, the need never arises to disturb existing investments for the sake of meeting liabilities,

the current receipts by way of premiums are always more than sufficient to meet working expenses and to provide for the payment of claims that mature, so long as the average life of the assured does not increase, and so long as the death-rate actually experienced remains satisfactory So long, therefore, as investments are carefully selected, and so long as a life insurance company does not become moribund through lack of new business, its existing investments are for all practical purposes fixed assets, i.e. assets it can realise in its own good time, and therefore need never realise unless prices are favourable

With ordinary commercial undertakings the position may well be different, for these often require to realise investments to tide them over slack times when they are working at a loss, but, even so, it is only those particular investments that will have to be sold under unfavourable conditions that will be sold at a loss, and it is only these that need be valued for Balance Sheet purposes as though they were floating assets In some cases it may be that, following this rule (and allowing a reasonable margin for contingencies) *all* the investments must be treated as floating assets—and perhaps also some of the more permanent equipment as well, but, in the case of really sound concerns, the position will unquestionably be different, and as a question of principle there certainly seems to me to be no reason for bringing into account, for Balance Sheet purposes, any loss on investments which cannot in reason be foreseen as a loss likely to arise as the result of actual selling If the provision for loss on realisation that is actually made is in excess of the loss that it is honestly expected will in fact be realised, the company is *pro tanto* creating a Secret Reserve The practice of creating Secret Reserves is by no means necessarily an objectionable practice, but it is certainly an unnecessary one

And now, gentlemen, I must bring this course of lectures to a close. As I stated at the start, I have not attempted to discuss matters that cannot usefully be considered at this stage, while the War is still proceeding, nor have I dealt—~~save~~ incidentally, and in passing—with Army accounts. My

main object has been to draw your attention to a few matters of importance connected with business methods and business organisation which, in my opinion, can usefully be dealt with now—and ought to be dealt with now, rather than hereafter. I do not expect that all the views I have expressed will meet with universal acceptation, but I have shown you how, to some extent at least, the ravages of war might rapidly be made good by sound and intelligent business methods. This war has many lessons to teach us, but the sacrifices we are all, in varying degrees, being called upon to make will not have been in vain, if we are able and willing to learn these lessons, and to build up upon our past mistakes a sure foundation for even greater achievements in the future. It is only the unteachable that never improve.

SELECTION FROM THE GENERAL CATALOGUE
OF BOOKS PUBLISHED BY
THE CAMBRIDGE UNIVERSITY PRESS

The Effect of the War on the External Trade of the United Kingdom. An Analysis of the Monthly Statistics 1906-1914 By A L BOWLEY Sc D Professor of Statistics in the University of London Demy 8vo 2s net

This volume is uniform with *Business Methods and the War*, and contains the substance of lectures delivered at the London School of Economics during January and February, 1915

Cash and Credit. By D A BARKER, ICS Royal 16mo Cloth 1s net leather 2s 6d net Cambridge Manuals Series

'It is an extremely cheap text book and a concise and lucid explanation is given of the subject. The general merit of the book is high"—*Clare Market Review*

'Not only the beginner but even the more advanced student may find much benefit and satisfaction in the perusal of the volume for it is clearly and freshly written.—*The Accountants Magazine*

The Theory of Money. By the same author Royal 16mo Cloth 1s net leather, 2s 6d net Cambridge Manuals Series

The chief merit of this compactly filled little book is that it contains a complete collection of all the subjects of monetary theory which are now important and interesting.—*Clare Market Review*

'Mr Barker has produced a manual which is a really wonderful feat of compression. The book can be very candidly recommended as an excellent specimen of a series of University manuals which are rapidly covering the whole field of modern learning.'

Financial News

British Credit in the last Napoleonic War. By AUDREY CUNNINGHAM BA Trinity College Dublin With an appendix containing a reprint of Des Finances de l'Angleterre by H LASALLE Crown 8vo 2s net

In this book Miss Audrey Cunningham designs to show that one of Napoleon's schemes for the overthrow of Great Britain was the production of financial chaos in Britain. This he hoped to manage by depleting the Bank of England of the gold reserve and by attacking British credit everywhere. The author carries out the inquiry with great skill and much insight.—*Glasgow Herald*

The Growth of English Industry and Commerce during the Early and Middle Ages. By W CUNNINGHAM, D D, Fellow of the British Academy, Hon Fellow of Gonville and Caius College, and Fellow of Trinity College Archdeacon of Ely Demy 8vo Fifth edition 12s 6d net

The Growth of English Industry and Commerce in Modern Times. By the Ven W CUNNINGHAM, D D, FBA, etc Fourth edition revised Demy 8vo Two parts (1) The Mercantile System 10s net (2) Laissez Faire 7s 6d net

"A book which for more than twenty years has held a place of own in the literature of English Commerce"—*Guardian*

"Dr Cunningham is never dull, he writes vividly as well as learned, and his work can be read from beginning to end without fatigue. Any reader who is interested in the social history of the Westminister."

BOOKS OF SPECIAL INTEREST IN CONNECTION WITH THE WAR

The Origins of the War. Lectures delivered in the Michaelmas Term, 1914. By J HOLLAND ROSE, Litt D, Fellow of Christ's College and Reader in Modern History in the University of Cambridge Crown 8vo Cloth, 2s 6d net paper covers, 2s net

Belgium in War. A Record of personal experiences By J H WHITEHOUSE, M P With 8 illustrations and an Introduction by the Chancellor of the Exchequer Demy 8vo Paper covers, is net, cloth, 2s net

The Expansion of Russia, 1815-1900 By F H SKRINE, F R Hist S, of H M's Indian Civil Service (retired) Third edition Crown 8vo With 3 maps 6s net Cambridge Historical Series

The Ottoman Empire, 1801-1913 By W MILLER, M A, Hon LL D in the National University of Greece Crown 8vo With 4 maps 7s 6d net Cambridge Historical Series

A Short History of Modern Europe from the Middle of the Sixteenth Century By J E MORRIS D Litt Crown 8vo 3s 6d net

Naval Warfare By J R THURSFIELD, M A Royal 16mo. Cloth, is net, leather, 2s 6d net Cambridge Manuals Series

The Royal Navy By JOHN LEYLAND Royal 16mo Cloth, is net, leather, 2s 6d net Cambridge Manuals Series

The Modern Warship By E L ATTWOOD, M Inst N A Royal 16mo With 18 illustrations Cloth, is net, leather, 2s 6d net Cambridge Manuals Series

Ocean Trade and Shipping By Sir DOUGLAS OWEN, Chairman of the Advisory Committee, State War Risks Insurance Office Demy 8vo With illustrations 10s 6d net Cambridge Naval and Military Series

Naval and Military Essays Being papers read in the Naval and Military Section at the International Congress of Historical Studies, 1913 Demy 8vo 7s 6d net Cambridge Naval and Military Series

Military History. By the Hon J W. FORTESCUE Royal 16mo Cloth, is net, leather, 2s 6d net Cambridge Manuals Series

International Law. By I. WESTLAKE, ~~LL D~~, LL D Part II war ~~Second edition~~ 8vo 9s net

The Collected Papers of ~~I. Westlake on Public International Law.~~ Edited by L. Q. C. M., LL D ~~1914~~ 8vo. net

